Gas Journal

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Editorial Notes

New Groups to Come?

Not long ago, discussing in these columns the movement towards grouping in the Gas Industry, we headed our article "Whither Amalgamation?" By way of answer during the past week, amalgamation has reached a very prominent position in the columns of the daily Press. We, along with many others, have complained often enough of the bad show which gas normally obtains in the dailies as compared with electricity, and it might seem ungrateful to grumble when it has for once been really prominent. We should, however, had the choice been ours, probably not have selected the financial aspect for our publicity, though, on the other hand again, the emphasis which has been laid on the high prices paid by groups for individual undertakings may do something to counteract the sedulous propagation by other interests of the doctrine that the Gas Industry is a decaying one. What this attention from financial writers will certainly not have done is to allay in any way the suspicions so widely held in the Gas Industry that finance has been, and continues to be, the prime mover.

The *Evening Standard*, one of London's three evening papers, is read far beyond the confines of the City, and this was the paper which on three successive evenings last week gave full prominence to the amalgamation aspect of the Gas Industry. "A City Correspondent" opened with a column on the front news page, "Control of Thirty Gas Companies Changes Hands." He followed next day with "Progress of Big Gas Control Move," accompanied by a leading article entitled "Gas," and on the third day "More Gas Merger Terms: Rising Shares" occupied half a column. With the main part of the City Correspondent's articles we are not greatly concerned; they are mostly records of fact—of the deals which have already been put through. But the sting, at any rate as far as the Gas Industry is concerned, is in the head. We quote the opening sentences of the first article: "A financial revolution is taking place in the British Gas Industry. In the past two years the control of over 30 local undertakings has passed into the hands of three financial corporations. The total purchase money involved is estmated at £2,500,000. City institutions are now planning fresh moves to buy out more gas undertakings. Offers will shortly be made to stockholders in several local companies." The Gas Industry cannot contemplate with equanimity such news as this. In general, it has no desire whatever to pass into the hands of "City institutions" of any kind.

The Consumer's Viewpoint

Now let us refer for a moment to the "leader" which accompanied the second financial article in the *Standard*. It pointed out that the future of the Gas Industry is a matter of wide concern; that on the whole it serves its ten million consumers reasonably and efficiently. These consumers, it said, would watch with keen interest the change which is going on in the constitution of the Industry. If the avowed object of economy and improved efficiency could be achieved, and the price of gas be reduced as well, there would be no grounds for complaint. But (and the italics are in the original) *the vital fact is that in public utility undertakings the interests of the consumer must be considered before all others*. And the the public would want an assurance that the financial dealings by which change of control is being brought about would not tend to make too great a demand on the profits of the Industry. The very good terms being offered to secure control were increasing the nominal capital of the Industry, and the consumer would feel that the benefit of any economies effected ought not to be devoted entirely to satisfying the dividend requirements of this increased capital. The consumer, it was suggested, might even question whether centralized control would actually yield economies. Moreover, the consumer would note that he is losing the influence on the conduct of the Industry which he, as shareholder as well, has been able to exercise in the past. And, finally, any move which may have the effect, rightly or wrongly, of encouraging high dividend expectations is not what the consumer is entitled to look for in a public utility undertaking.

Now all these arguments are familiar enough, having been put to us time and again by those who have the interests of the Industry greatly at heart, who have long experience of it, and yet are full of misgiving at the prospects. They are difficult to answer, but so, too, are the arguments of those who are directing the groups—we refer to the experienced gas administrators and not to the "City institutions." They point out, with which all of us agree, that there are black spots in the Industry, places where for one reason or another electricity is making quite unnecessary inroads. The big groups, they argue, can afford to go a year or two without a dividend from such undertakings while they attend to the modernization which may be necessary for their salvation. The South-Eastern, they claim, has already justified its existence; why should not others?

A National Policy

In conclusion, we would refer once again to the admirable survey of what has already been accomplished and what might still be done in the paper presented at the recent British Association Meeting by Dr. Lander and Dr. E. W. Smith [" Journal," Sept. 12]. This was a paper which enjoyed the national publicity which is always deservedly accorded to the proceedings of the Association, and we trust that all gas men who are interesting themselves in the grouping question, to whichever side their views incline, will have given it careful study. In the view of the authors such aggregations of gas undertakings as are now in process of formation will prove of national importance just in so far as the facilities provided are used to the greatest advantage. One fears a development of this kind, they say, because, although it is the first step in the right direction, it would not appear to have been taken as a result of a thoroughly considered national policy. So far no evidence has been forthcoming that the acquisition, for financial reasons, is any more than an end in itself. The authors feel that the Industry is of such national importance that it should not continue to develop " on these haphazard lines," with the main incentive for major changes coming from outside financial interests.

These and other opinions voiced by the authors of the British Association paper, and not, as we have good reason to know, by any means peculiar to them, constitute something of a challenge. With the existing, and threatened additional, competition in the market for unattached undertakings, we realize that it would be difficult for the amalgamators to disclose their plans. At the same time they would win a vast amount of sympathy and willing co-operation in the Industry if they could in some way or other show that their schemes are towards a thoroughly considered policy, and not merely on the " haphazard lines " hinted at in the British Association paper.

Dr. Lander and Dr. Smith felt that sufficient material had been put forward in their paper to justify a much more detailed study of the subject, either by a Committee of the British Association, a Committee of the Gas Industry, or even by some body brought into being by a Government inquiry. Of these three, let us leave the matter in the hands of the Gas Industry for the present. The Industry looks to the National Gas Council for guidance on matters of policy, and the Council, at its General Meeting earlier this year, definitely advocated a line of policy in urging the weaker brethren among the gas undertakings to ally themselves with their stronger neighbours. While we quite appreciate that the Council has no power whatever of compulsion in this matter, it would be interesting to know whether it considers that the achievements of the groups since then indicate satisfactory progress in the desired direction. One thing is certain—that if the threatened activity of the " City institutions " materializes there will be poor prospects for any nationally formulated scheme.

Make It Known

Like community singing, community advertising proves a good draw. The Gas Industry does a good deal of it—not community singing, but community advertising; and the policy is one we should be glad to see still further adopted. Take the example of Kinsale, a little seaport situated some fourteen miles from Cork. Long ago the town figured in history; for it was once taken by the Spaniards, and was later used as a landing place by James II. But since then it has fallen somewhat into the background. How to push its way to the front again—this time as a tourist resort? Community advertising! Money was, we are told, spent on newspaper advertising, and this season has been the most prosperous that the district has experienced.

Those who are acquainted with the captivating scenery of County Cork will be aware that Kinsale had a " good story," and Kinsale has made it known. No one who was thereby induced to visit the spot is likely to have been disappointed in what he saw, and therein lies the kernel of all good advertising. As has been frequently emphasized in the past, and as Sir Herbert Morgan, addressing the Incorporated Secretaries' Association, repeated a few days ago, the old-fashioned principles of honesty and integrity must prevail in advertising. Based upon this sound foundation, Sir Herbert believes, and we are in full agreement with him, that advertising has a greater effect on the development of industry than any other method. " Economy of production," he says, " is an old principle, and advertising to increase production is a great element in preserving that principle. British trade has been built upon quality and value, and only those advertisers who give these will survive. The British merchant's promise is a binding pledge, and an advertiser's promise must be the same." Sir Herbert put the case high, though not too high, when he expressed the opinion that, as the result of advertising and of mass production, of which advertising is the " Fairy Godmother," the standard of living throughout the country has been raised, and the comfort and happiness of the people materially increased.

Gas has a good story to tell, needing nothing more than the plain, unvarnished truth. Make it known. Invoke to the fullest extent the aid of that " Fairy Godmother," who has already done so much, and can certainly accomplish a great deal more.

The Need for Action

There is, perhaps, especial point in the above remarks at the present moment, when we have before us the recently issued Part I. of the Board of Trade Return relating to all authorized gas undertakings in Great Britain for the year 1933 [H.M. Stationery Office, price 4s. 6d. net]. Some of the figures from this return were reproduced on p. 638 of last week's issue of the " Journal," and they are not figures which should leave the Industry completely satisfied with matters as they stand. However convincing may be the reasons—and we know that in the past year conditions were none too favourable to expansion of business—it cannot be a source of gratification to learn that, for the second year in succession, there was in 1933 some falling off in the sales of gas. In 1932 the drop was but slight, and on the present occasion it is even slighter, but nevertheless both years register on the wrong side of the account. Actually, in millions of cubic feet, the total quantities of gas sold during the past three years have been as follows: 1931, 290,693; 1932, 286,988; and 1933, 286,144. As a matter of fact, the decrease in the total sales in 1933, as compared with 1932, of 844 million c.ft., amounts to only 0·3%, and these two years are not the only ones since 1920 to have witnessed some falling off in consumption; but the fact remains that the 1933 figures are the smallest since 1928. The year 1929, with total sales figuring at 292,598 million c.ft., was the record year, so that we are now some little way behind our previous best.

With improved trade conditions, and more money in circulation, better results may be reasonably anticipated;

and then there is the Gas Undertakings Act, 1934, under which there is bestowed freedom to enter into special contracts, without prejudice to the position from the dividend point of view, and from this source much is rightly looked for. Consideration must also be given to the trend towards amalgamation and linking-up, which, as we have mentioned in another article, has now become so marked as to attract wide attention in City financial circles. Already there has been quoted in the "JOURNAL" pages one instance of reductions in price brought about by a Holding Company through economies in working, but there has as yet been insufficient time to show how far the movement as a whole is likely to influence matters in this direction. But apart altogether from such influences as these, we would draw attention to the possibilities that may be contained in greater and still greater publicity. Everyone knows how extensive, and how good, is the work done already in this way by the B.C.G.A., certain enterprising gas undertakings, and other equally public spirited manufacturers, and the Industry is deeply grateful to them for this help. But still more can be done. It will cost money, of course, but even to-day there may be a few undertakings outside the B.C.G.A. who should join up, and there are undertakings which are not pulling their weight in the matter of local publicity. Any such we would exhort to "make it known"—to spread the story of gas, truthfully, but fearlessly.

Consumption per Consumer

HAVING considered the total sales of gas figures in the Board of Trade Return, we may take a few moments to glance at some of the other statistics, which relate on this occasion to 727 undertakings—a falling off of seven when compared with 1932, several having been absorbed by others in the meantime. The total number of therms sold by these undertakings during 1933 amounted to 1,366,011,600, this figure including an estimate for those concerns not authorized to charge on a thermal basis. Although there was the falling off above referred to of 0·3% in the quantity of gas sold, the amount of gas made (including that bought from coke ovens) was 221 million c.ft., or 0·1%, more than in 1932. A great deal larger quantity than this increase in gas made was added to the water gas make, which was 769 million c.ft., or 2%, above the figure for the preceding year, while the coal gas made decreased by 1,839 million c.ft., or 0·7%.

During 1933 the total number of consumers increased by 239,364, or 2·4%, to 10,012,379. Since 1920, to which year the table included in the present return goes back, the number of consumers has increased without a break from 7,448,332. On the face of it, this gain of over 30% is, of course, highly gratifying, but there is an aspect of the matter which must not for a moment be permitted to pass from mind. In 1920 the prepayment consumers outnumbered the ordinary consumers by just over half a million; in 1933 they exceeded the ordinary consumers by more than two millions. In other words, during the past fourteen years, while the ordinary consumers have raised their own total by something above half a million—that is, up to the number of prepayment consumers in 1920—the prepayment consumers have put practically two millions on to their figures. In this period the prepayment consumers have never once slipped back, but have gone on from strength to strength. There were, in fact, in 1920 4,030,647 prepayment consumers, whereas in 1933 there were 6,017,383, or half as many again. The record of the ordinary consumers, unhappily, is not equally flawless, inasmuch as in their case the 1932 and 1933 figures are not quite so good as those for 1931. The totals for the four relevant years appear in the return as: Ordinary consumers—1920, 3,417,685; 1931, 3,997,610; 1932, 3,989,566; 1933, 3,994,996. It will be seen that last year, as compared with 1932, there was a small gain in the number of ordinary consumers (as well as a much larger one on the part of the prepayment consumers), though this addition was not quite sufficient to bring the ordinary consumers back to the 1931 level.

A Matter of Significance

WITH a total number of consumers in 1933 nearly half a million greater than in 1931, the fact that the sales of gas were somewhat less in 1933 than was the case in 1931 is a matter to which considerable significance attaches. New consumers cost money, and when this cost is not countered by a corresponding increase in the all-round consumption of gas, it is unfortunate. This is the aspect of the figures which must unceasingly be borne in mind. A sure way to reduced prices is through an increased consumption of gas per customer. Mr. J. W. Whimster, of Bath, who understands all about cheap gas, explained at a meeting of the Southern Association some few years ago, if memory serves aright, how successful he had been in increasing the load per consumer in his area. Can anybody say what would be the effect upon the figures in the Board of Trade Return, if every ordinary consumer throughout the country, and, say, half the prepayment consumers, were persuaded to install, and use, an additional gas-using appliance? This may be an impracticable goal, but let us strive to get as near to it as possible. Undoubtedly, a growth in the number of consumers, giving a broader base, means added stability to an already stable industry, but to be of the greatest benefit bigger numbers must bring bigger output. The quantity of gas sold to ordinary consumers and for power purposes, &c., was larger in 1929 than it has been in any of the four succeeding years, but in the meantime there has been some increase (about 22,000) in the number of ordinary consumers. From an industrial point of view, the four years have, of course, been bad ones.

One column in the return which affords us particular pleasure is that relating to the quantity of gas sold for public lamps. This again shows the increase to which experience has accustomed us—on the present occasion from 12,130 million c.ft. to 12,242 millions. Here we have proof of sound judgment on the part of lighting authorities in choosing what is best suited to their purpose—as well as evidence of the fact that our electrical friends are spending quite a lot of their time in "barking up the wrong tree."

Coke Oven Gas

A GRAPH of the number of authorized undertakings included in the return would be striking; the drop having been from 798 in 1920 to 727 in 1933. As recently as 1930 the number was 767. Since then the policy of amalgamating and linking-up has been gathering momentum.

It was, of course, to be expected that, with a 2% increase in the quantity of water gas made in 1933, as compared with 1932, the quantity of coal carbonized in 1933 (16,714,000 tons) would be somewhat less than in 1932. A larger percentage increase than in the case of water gas is shown by coke oven gas supplied to gas undertakings for sale. The quantity of gas bought from owners of coke ovens during 1933 and distributed by statutory gas undertakings was 16,327 million c.ft., which was 885 millions, or 5·7%, more than in 1932. A table

reproduced on p. 638 of last week's "JOURNAL" gives the names of the 31 undertakings purchasing this gas. Since 1923 the number of purchasing undertakings has doubled, while the amount of gas bought by them has quadrupled. In their recent paper before the British Association ("JOURNAL" for Sept. 12, p. 589), Dr. C. H. Lander and Dr. E. W. Smith said it has been implied on many occasions that the Gas Industry in England has been backward in making use of the supplies of surplus coke oven gas which are available, but the figures contained in the return bear out the contention of the authors that this reproach is not by any means justified. In the quest for aids to the supply of that cheaper gas which will give our Industry the larger consumption per consumer which is so greatly desirable, the possibilities of coke oven gas will enter more and more into the scheme of things. Plenty of experience is already available, and it is being added to day by day.

The B.C.G.A.

THE paper which Mr. W. D. Rowe, Manager of the B.C.G.A., read at the meeting of the Wales and Monmouthshire Association of Gas Engineers and Managers last week is a fitting corollary to the 23rd Annual Report of the General Committee of the B.C.G.A. The latter, of course, is an account of work accomplished during the past year; Mr. Rowe's paper on the aims and objects of the Association is concerned with how further to increase the value of its activities to subscribing members, and is full of useful suggestions which should be put into practice.

The Report of the General Committee is certainly an excellent record, and it shows that members are making far greater use of the facilities provided by the Association. These facilities have developed enormously both in scope and effectiveness, and they should be exploited enthusiastically throughout the Industry. Thanks to efficient organization at the Association's Headquarters, keenness and the policy of "looking forward"—a policy stressed by Mr. Rowe in his paper—every gas undertaking in Great Britain has at command assistance on every phase of gas salesmanship, both domestic and industrial. The work of the B.C.G.A. has greatly increased—and it is work essential to the progress of the Industry.

As readers are aware, it became necessary in April last to increase the rate of subscription to the National Bodies to 10s. per million c.ft. of gas made. The Annual Report of the General Committee of the B.C.G.A. records with "great satisfaction" that this increased contribution has been agreed to by 66% (reckoned on the basis of annual output of gas) of gas undertakings subscribing on the joint basis, and that the full amount of the increase is to be applied to the Association's work. For our part we do not regard 66% with any lively satisfaction. The figure is far too low, and it is absurd to suggest that the whole Industry is fully alive to the intensity of competition, and appreciative of the means for combating it, while one-third of the members of the B.C.G.A. sit back while others do the work.

New Moves

PERHAPS this one-third minority needs reminding that the business of the Gas Industry—and of any other industry—does not stand still. That pleasant, static attitude is the stumbling-block of our Industry, and we have little patience with it. The pace to-day is different from yesterday, and it demands different effort. The progress of gas would have been far less had it not been for the "forward looking" policy which prompted the formation of the B.C.G.A. and which has resulted in an organization the envy of many another industry. We have spoken about the "facilities" of the B.C.G.A. Sound advice is to be had, for instance, on window display from an expert in this particular craft, newly appointed, but whose services have already proved of local, as distinct from national, value. Then a Press Contact Officer is at hand to help in any special function of any undertaking. It may be the opening of new plant, the inauguration of showrooms, or perhaps centenary celebrations, and the like; his services to bring publicity for gas locally and nationally are at command. There is the Central Information Bureau—a bottomless well of information. There are the Industrial Development Centres, for which the B.C.G.A. is largely responsible. Office planning is another phase of the Association's work. Then we come to training of the personnel of the selling staff and of fitters, the popular lectures and demonstrations, assistance at exhibitions, and in the production of first-class literature of the propaganda type, and the new moves in connection with Home Service—the awakening of women to the modernity of gas.

The Annual Report of the General Committee of the B.C.G.A. is excellent reading, and Mr. Rowe's paper should bring greater faith in the Association's possibilities in the future. We need not dilate upon the paper here, but we are impressed with the author's obvious sincerity to serve our Industry and the plain fact that only by co-operative effort can we hope to prosper as we know the Industry can prosper. We feel that the response to the efforts of the B.C.G.A. should be greater than obtains to-day, and we would call attention to the recent remark of a distinguished member of the Gas Industry of the United States who "was appalled at the lack of selling personnel" in Great Britain—and this in face of the fact that the means are here to remedy any such lack.

Street Lighting

THERE are a number of features of the Conference of the Association of Public Lighting Engineers held in Aberdeen last week which call for attention apart from the report of the proceedings which we publish elsewhere in this issue. The first point that may be mentioned is that the Association, now in the eleventh year of its existence, has established itself as one of our technical organizations whose annual conferences receive a considerable amount of attention. Public lighting is now definitely on a higher plane than it was only a relatively few years ago, when the public lighting engineer as such was unheard of and certain jokes were current as to whether the so-called lighting superintendent was not really the head lamplighter. All that has changed, and we now find no fewer than 250 delegates and lighting engineers attending this year's Conference of the Association in Aberdeen—ample tribute to the value of the work which the Association has been doing during the past ten years.

Not the last important aspect of that work is the influence it has had in the appointment by the Ministry of Transport of a Departmental Committee to inquire as to what steps should be taken for securing more efficient and uniform street lighting, with particular reference to the convenience and safety of traffic. It is to be hoped there will be some parallel here with the appointment of the Home Office Departmental Committee to inquire into factory lighting. The result of that inquiry had a marked influence upon the efficiency of the lighting of factories and workshops, and it may be that the Ministry of Transport's street lighting committee will make recommendations which will have a similar influence upon street lighting.

Apart from the papers and discussions at Aberdeen,

the outstanding feature was the outdoor and indoor exhibition of lighting appliances. Many streets were fitted with experimental installations of both gas and electric lighting, and although the comments on the rather disfiguring effects of the new gaseous electric discharge lamps upon the features of pedestrians were by no means complimentary—the attempt is now being made to put a little red into them in order to achieve some degree of whiteness—there was general praise for the pleasing and shadowless gas lighting which was installed in a number of streets. This exhibition of street lighting emphasized the manner in which the manufacturers and the large organizations are spending money and energy in evolving the best that science can produce; and the manufacturers went to a great deal of cost in fitting up the street installations and also the exhibits in the Music Hall building.

A distinct lead is being given to lighting engineers. It is the fact, of course, that public lighting engineers are in a difficult position in that they are finding it extremely hard to secure the allocation of sufficient money by their local authorities to give effect to their progressive ideas. There are a few exceptions, such as Glasgow, with its Lighting Department 100 years old and a large expenditure upon public lighting. For the most part, however, public lighting engineers are having to fight hard to secure what may be considered an adequate allowance for street lighting having regard to the needs of modern road traffic, and it is in this respect that such Conferences as that at Aberdeen should help considerably if only an account of the proceedings is brought prominently before those concerned with public lighting matters in the various localities.

On Water Heating

In his paper to the North British Association of Gas Managers Mr. D. C. K. Parkinson, of Aberdeen, rightly points to the great importance of the domestic water heating and central heating load by gas, and implies, also with justification, that, in general, hitherto the Gas Industry has regarded its development rather apathetically. We must concentrate more on " a large field which, up to the present, has been touched only on the fringe," and we must improve our sales organization. There is no doubt whatever that success in full measure will be achieved only if the Industry is prepared to train salesmen in the technicalities of water supply and heating engineering, as well as in the particular applications of gas, and is prepared to remunerate such qualified salesmen adequately. This is only one phase of the problem, but we regard it as being most important. Well-directed sales campaigns are worse than useless if they are not backed up by salesmen having a knowledge of systems of water supply and water authorities' regulations, and a thorough understanding of all types of water heating systems. For example, while the fact that many existing installations are giving an indifferent service and are prompting consumers to turn to gas as a solution, there are solid-fuel installations which are perfectly satisfactory, giving first-class hot water service, where gas is desired as the ideal alternative for summer or occasional use. In the former the gas hot water salesman, apart from his knowledge of the gas hot water heater, must be in a position to arrive at why the installation is imperfect, and to take the necessary steps to put it right. In the latter circumstances he must be competent to provide a gas installation which at the minimum cost of installation will give comparable hot water service. Lack of knowledge—and this is the point we would emphasize most strongly—may result in his not only giving an unsatisfactory service with gas, but in ruining the existing solid-fuel system.

Mr. Parkinson's paper, which was published in last week's " Journal," should prove an aid to efficient gas service in the hot water heating field and in central heating. Without any apology we repeat what we have stressed previously in these columns—that the whole science of salesmanship in the water heating field is to install in the proper manner the appropriate appliance for each individual situation. The gas circulator, instantaneous heater, and storage heater have been developed to a high degree of efficiency and a high standard of finish. Each has its special advantages and special sphere, and the satisfaction of the consumer depends upon whether the salesman gives the right advice in the light of the particular circumstances. Mr. Parkinson is well aware of this, and he asks the Industry, as we do, to encourage the right type of man. If it does, " there is no doubt that all domestic hot water supply and central heating will be captured. . . ."

Look to the Sales Policy

As far as Aberdeen goes, there are grounds for such optimism. During recent months the Aberdeen Gas Department has been engaged in an intensive campaign for the sale of hot water appliances. The result—hundreds of circulating boilers have already been installed. " The public have been made to realize that in gas, at a cheap price, they have the ideal medium for the supply of hot water in the home." Nor have sales activities been confined to this field. A large number of gas-fired central heating units have been installed, and all are working satisfactorily.

Results such as those at Aberdeen are not to be gained, of course, without a courageously-planned sales policy. For some years now we have emphasized that business depends largely on skilful tariff schemes, and that in any block or multi-part tariff, quick relief should be given. The Aberdeen scale of charges, we are glad to note, affords this quick relief. After the first 5,000 c.ft. per quarter, the consumer gets an appreciable concession on the additional gas he uses—more than 1d. a therm on the next 45,000 c.ft. Consequently Mr. Parkinson is able to quote a most attractive figure for water heating to every consumer who has a gas cooker. The price he quotes in these circumstances is 1s. 9d. per 1,000 c.ft., or 4·2d. per therm. We are well aware that not every undertaking in the British Isles could offer the first 5,000 c.ft., as Mr. Parkinson does, at 5·4d. per therm; but we adhere to the principle that only by " quick relief " in any block or similar system of charge can we hope ultimately to develop sales as they can be developed. There are, of course, other attractive methods of winning business, as Mr. Parkinson broad-mindedly realizes. One method—which has been exploited so successfully at Halifax—is to arrive at a certain consumption for a particular water-heating appliance, to the cost of which maintenance, fitting, depreciation, and interest charges are added. An " all-in " charge is then quoted. At Halifax, for a particular water-heating load, the slogan " Fourpence a day is all you pay " met with the response which enterprise merits. In this regard, Mr. Parkinson says: " Rather a gamble, perhaps, but the selling power of a scheme of this kind has proved to pay any undertaking by which it has been adopted." We advise gas undertakings, whatever the form of tariff they adopt to capture the water heating load, to take a gamble, and WIN.

Gas and the Building Industry

WHILE bricks and mortar, timber and tiles retain their importance as the basic materials upon the excellence of which the true value of any building is contingent, the architect and contractor to-day must take advantake of a very large number of ancillary arts and crafts in order to produce a structure which satisfies modern tastes and requirements. We have many times in the past stressed in these columns the necessity of the Gas Industry keeping in close and constant touch with the architect and builder; and it is in the direction of these ancillary arts and crafts—which include all the essential domestic services—that the Industry has most to show. Described in detail in our last week's issue were a large number of gas and allied displays at the Building Exhibition just concluded at Olympia, on the presentation of which congratulations are due to many firms in the Gas Industry, who seized this opportunity of demonstrating in a remarkably comprehensive manner the invaluable service gas renders in the modern home.

A particularly interesting point which emerges from a survey of the Building Exhibition is the progress which has been made in extending the benefits of modern industrial research to every class of the community; and it is not inappropriate that this year's Exhibition closely follows the publication of the Report of the National Housing Committee (to which we referred in the "JOURNAL" for June 20 last), whose scheme includes the building of at least a million new houses within the next ten years, to be let at inclusive rents of 10s. a week or less. What a chance lies here for the Gas Industry! And the Building Exhibition fully demonstrated that the Industry as a whole is ready to play its part in this National task of slum clearance.

The Exhibition clearly showed how the Gas Industry is assisting in making less essential difference between the modern workman's dwelling and his employer's mansion than ever before, since almost every device and amenity contributory to the comfort and practical efficiency of the home can nowadays be included in the most inexpensive residence. While a number of firms have taken advantage of the opportunity offered by the Exhibition of displaying for the first time entirely new or improved designs of gas appliances, and while many of the more expensive types of gas apparatus were naturally shown, the general impression left by the Exhibition as a whole is that an endeavour has been made to show how attractive finishes and labour-saving appliances previously beyond their means have now been brought within the reach of the artisan classes by leading manufacturers in the Industry. In addition to the more usual apparatus, the gas-operated refrigerator is also being adopted in the smaller property, many useful built-in assemblies being available for kitchens where space is limited. It was also gratifying—though perhaps only natural—to observe that a number of model kitchens which were set up to the design of leading architects in various parts of the Exhibition as examples of contemporary planning, included gas cookers, refrigerators, and wash-coppers. Altogether, the Gas Industry's display should go a long way towards convincing the architect and builder that gas has an increasingly important part to play in the home of the future.

Forthcoming Engagements.

Sept. 28.—I.G.E.—Joint Research Committee, 10.30 a.m.; General Research Committee, 2.30 p.m.
Oct. 1.—GAS COMPANIES' PROTECTION ASSOCIATION.—Meeting of the Committee at 5, Victoria Street, S.W. 1, 2.30 p.m.
Oct. 4.—MIDLAND JUNIOR ASSOCIATION.—Opening Meeting and Presidential Address of J. H. Wainwright.
Oct. 5.—NORTH OF ENGLAND ASSOCIATION.—Autumn Meeting at Grand Hotel, Middlesbrough, 11.15 a.m. Presidential Address of R. H. Duxbury, of South Bank, and visit to I.C.I. works at Billingham.
Oct. 5.—B.C.G.A.—South-Western District Conference at Ilfracombe.
Oct. 6.—WESTERN JUNIOR GAS ASSOCIATION.—Opening Meeting of 1934-5 Session at Bath.
Oct. 17.—B.C.G.A.—Executive Committee, in the Board Room, 28, Grosvenor Gardens, S.W. 1, at 12 noon.
Oct. 19.—SOUTHERN ASSOCIATION (WESTERN DISTRICT).—Commercial Meeting, Rougemont Hotel, Exeter, 2.45 p.m.
Oct. 25.—COKE OVEN MANAGERS' ASSOCIATION.—Annual General Meeting and Dinner at the Hotel Victoria, London.
Oct. 25.—EASTERN COUNTIES ASSOCIATION.—Autumn Meeting at 28, Grosvenor Gardens, S.W. 1.
Oct. 26.—B.C.G.A.—Scottish Conference at Dundee.
Oct. 26.—MANCHESTER DISTRICT ASSOCIATION. — General Meeting at Midland Hotel, Manchester.

Correspondence

Rating and Valuation of Gas Undertakings

Gas Light and Coke Company's Appeal before the Essex Quarter Sessions.

SIR,—With reference to the notes appearing in your issue of Sept. 5 (p. 506) about this case, I should like to point out that, although the Court of Quarter Sessions at Chelmsford did not "make any pronouncement upon the merits or demerits of any party's contentions," the fact that they reduced the assessment from £6,907 to £5,222 rateable value proves conclusively that they disagreed with the valuation put in by the Rating Authority who sought to prove that the £6,907 ought to be £8,000 rateable value.

It will be said that they must have also disagreed with the valuations put forward by the appellants; and it is upon this feature that I wish to make one or two observations. Valuers in other counties are showing a disposition to make deductions from the figure fixed by the Court, £5,222. It is wholly wrong to do so.

The assessment in Dagenham has been increased each year since the first Quinquennial assessment because of great building activities in the Parish. Why had the Company consented to pay on the assessment of £5,222 for the previous year? The reason was because that figure had been arrived at by applying the same percentages to the revenue and structural values (for the productive and trunk mains respectively) as had been applied at Ilford. The latter assessment had been fixed only a year previously, as the result of an appeal by the Company to the same Court to which they would have had to appeal against this Dagenham assessment. The Directors were therefore advised that it would be unwise to appeal against that figure after so short an interval, but when a year later the same deduced percentages were applied, the appeal was determined upon.

You say that the finding of the Court—namely, £5,222—was not a justifiable figure. This, at all events, is its history, and it may well be that had it not been for the fact that the Company had accepted and paid rates for the previous year on £5,222 the Court would have awarded a lower figure.

There are other points arising out of your notes upon which I should like to comment, but space will not allow. I do not agree, for instance, that the Court "gave no indication whether they agreed with the contention of the Appellant Gas Company that the Kingston formula must be strictly applied and the 'profits' basis be adopted for the valuation of the Undertaking." No other basis than the profits basis was put forward by any witness.

Yours, &c.,
HUMPHREY RYDE.

Ryde, Sons, & Browne,
Chartered Surveyors,
2, Central Buildings, S.W. 1,
Sept. 20, 1934.

Personal

BRADFORD'S NEW GAS ENGINEER.

The Bradford City Council on Sept. 18 unanimously confirmed the Gas Committee's recommendation (as announced in the "JOURNAL" for Sept. 12) to appoint Mr. GEORGE ERNEST CURRIER in succession to Mr. Edward Crowther as

Mr. G. E. Currier.

Engineer and General Manager to the Gas Department. Mr. Currier has been Deputy Gas Engineer at Bradford for the past two and a half years and has been in control of the Department since Mr. Crowther left last April to become Engineer and Manager at Salford.

* * *

MR. G. A. MALLETT TO BE MAYOR OF IPSWICH.

Mr. G. A. Mallett, who has just commemorated his completion of fifty years' service with the Ipswich Gas Light Company, has intimated to the Ipswich Corporation Committee appointed to select a gentleman for nomination as Mayor of Ipswich for the ensuing year that he is willing to accept the honour.

Mr. Mallett has had a life-long association with the town, and, despite his arduous duties as Secretary of the Gas Company, he has yet found time to take an active and varied interest in Ipswich affairs. For just fifty years he has been associated with the Gas Company. He was the first junior clerk ever employed by the Company, and advanced in the Company's service until, in 1914, he was appointed Secretary. He has been President of the Ipswich Rotary Club, Chairman of the Ipswich Chamber of Commerce, a member of the Committee of the Ipswich Industrial Development Association, and auditor for the Eastern Counties Building Society and the Ipswich Branch of the Workers' Educational Association.

At the conclusion of the last meeting of the Directors of the Gas Company, Mr. Henry Woodall, the Chairman, made a presentation of a silver tea service to Mr. Mallett as a token of the Directors' appreciation and to commemorate his completion of fifty years' service with the Company.

Mr. Woodall spoke in high terms of the valued and devoted services Mr. Mallett had rendered to the Company during that long period. Mr. Mallett's work had always been characterized by zeal and enthusiasm, and the Directors hoped he would remain with them for many years. Mr. Woodall also alluded to the municipal honour which was about to be conferred on Mr. Mallett, and the Board heartily congratulated him on being selected for the high position of Chief Magistrate, wishing him every happiness, and health and strength to carry out his duties.

In the evening the staff of the Company gathered to make their own presentation. Mr. A. W. Sumner, Engineer and Manager of the Company, presented the gift of a silver salver, suitably inscribed, and said that, while he had not worked long with Mr. Mallett, his own long experience of the Gas Industry enabled him to appreciate fully the valuable work which Mr. Mallett had done for the Ipswich Company.

Mr. A. W. Mather mentioned his own thirty-six years' association with Mr. Mallett, and spoke highly of his work, not only in the interests of the Company, in the development of which he had been largely instrumental, but also of his constant efforts in connection with the welfare of the staff and employees.

Mr. Mallett, in accepting the salver, thanked the staff for the goodwill which he knew it represented, and expressed his appreciation of the loyal service and help which the staff, past and present, had always given him.

Mr. FRANK HARMAN has been elected to fill the vacancy on the Board of Directors of the Slough Gas and Coke Company caused by the death of Mr. Robert Victor Elvey.

* * *

Mr. FRANK P. DERHAM has been appointed to fill the vacancy on the Board of Directors of the Gas Supply Company, Ltd., caused by the resignation of Mr. Russell Martin, consequent upon his appointment as a Justice of the Supreme Court of Victoria.

* * *

To mark the occasion of the completion of 50 years' service with Messrs. W. & B. Cowan, Mr. A. NORTON, the Southern Representative of that firm, has been presented with a radiogramophone, as a token of esteem. The presentation on behalf of the Directors, executives, and other colleagues was made by Lt.-Col. H. W. Woodall, C.I.E., M.Inst.C.E., Chairman of Parkinson & Cowan, Ltd.

* * *

The Milbourne Medal for the Session 1933-34 of the Midland Junior Gas Association has been awarded to Mr. F. H. BATE and Mr. A. R. MYHILL for their paper entitled "Carbonizing Results in Vertical Retort Practice," which was published in the "JOURNAL" for April 25 last (p. 203).

* * *

Miss MARGARET BEATTIE, who has been in charge of the showroom of the Burntisland Gas Department for many years, was honoured by the staff and employees of the works in the Boardroom on Sept. 20 and made the recipient of a presentation on the occasion of her marriage. Mr. William Brown, the Gas Manager, presided and handed over the gifts, which most appropriately took the form of a gas cooker and gas iron. Mr. Brown paid tribute to Miss Beattie's services with the Department and conveyed the best wishes of her colleagues and himself for her future happiness.

Obituary

The death occurred last week, at his home, at Newtown, Ledbury, of Mr. ROBERT HYNER, at the age of 81 years. A native of Cambridgeshire, Mr. Hyner went to Ledbury in 1879, to take up the position of Manager of the Ledbury Gas Company—a position he held for 42 years, when he retired. He led a very active life even to within a few days of his death when he was out and about the town.

* * *

At the last meeting of the Co-Partnership Committee of the Gas Light and Coke Company Sir David Milne-Watson reported the death of Mr. MALCOLM HUNTER, the Company's late Transport Manager, who was "a most loyal officer and a most capable and likeable man."

* * *

The death occurred of Miss K. PARDOE, Secretary of the E.B. Refractory Cement Company, Ltd., on Sunday, Sept. 16. Miss Pardoe was well known personally by many in the Gas Industry.

International Conference of Benzole Producers.

Sir David Milne-Watson Re-Elected President.

At the Seventh Plenary Meeting of the International Conference of Benzole Producers held at Munich, the President, Sir David Milne-Watson, who is also President of the National Benzole Association, was unanimously re-elected.

An important and representative delegation from Great Britain attended the Conference, while other countries represented were Australia, Belgium, Czecho-Slovakia, France, Germany, Holland, Poland, the Saar, and Spain.

Reports giving a general survey of the economic situation of the benzole market in various countries were presented, and, in addition, papers were read dealing with the anti-knock value of benzole motor spirit and recent technical developments in its production, refinement, and distribution, special attention being paid to the Inhibitor process.

Among the Delegates from Great Britain were Mr. S. Henshaw, Chairman of the National Benzole Company, Ltd., and Mr. A. Hittinger, General Manager.

News In Brief

The Chef de Cuisine of the Carlton Hotel, London (M. Herbodeau, Chevalier of the Legion of Honour), has chosen one of the latest "New World" gas cookers for his house at St. Cloud.

The Free State Local Government Department has sanctioned a proposal of the Athlone Urban Council to borrow a sum of £500 for the purpose of installing gas cookers in houses, of which the Council are owners.

The Next Commercial Meeting of the Southern Association of Gas Engineers and Managers (Western District) will be held at the Rougemont Hotel, Exeter, on Friday, Oct. 19, at 2.45 p.m. (Committee Meeting at 2.15 p.m.)

Declaration of Calorific Value.—In accordance with the Gas Undertakings Act, 1929, the Cudworth Urban District Council Gas Department announce that the declared calorific value of the gas which they intend to supply on and after Jan. 1, 1935, will be 500 B.Th.U.

The Advertisement Campaign of the Gas Light and Coke Company for the coming autumn, which is just commencing in the London evening newspapers, strikes a novel note. The first few of the series deal in a convincing manner with that "chillspot" in the hall.

The Monthly Statement regarding the work of the Aberdeen Corporation Gas Department showed that during the month of August a total of 127,119,000 c.ft. of gas was made. This figure represents an increase of 5,018,000 c.ft., as compared with the corresponding month of last year.

From the September Survey, on the Gas Committee's recommendation, the price of gas in Ardrossan will be reduced from 3s. 9d. to 3s. 6½d. to ordinary consumers by automatic meter. This decrease represents a total reduction in the price of gas since January last of 7½d. per 1,000 c.ft.

The Manchester District Association will meet at the Midland Hotel, Manchester, on Oct. 26, when, after the transaction of the ordinary business of the General Meeting, members of the staff of the Stretford Gas Undertaking will present a paper dealing with large-scale uses for gas. A visit will be made to Trafford Park in the afternoon.

The Industrial Co-partnership Association is continuing its series of Monthly Lunches on industrial subjects, and on Wednesday, Nov. 7, Mr. Stanley Bruce, the Australian Minister in London, will preside at a Lunch to be addressed by Lord Hirst of Witton. The Archbishop of York, Sir Arthur Salter, Lord Allen of Hurtwood, and Mr. Israel Sieff are included among those who will deliver addresses at these Lunches.

The Illuminating Engineering Society have arranged three meetings in the near future in different parts of the country. On Oct. 9 the opening meeting of the Society will be held at 2, Savoy Hill, W.C. 2, when Mr. H. Hepworth will deliver his Presidential Address. On Oct. 11 and 16 there will be further meetings respectively in Birmingham and Liverpool at each of which there will be addresses on Illumination Progress followed by displays of lighting equipment, &c.

A Gas Cookery Exhibition organized by the Middlesbrough Gas and Electricity Committee was held in the Town Hall crypt last week and attracted large attendances. In addition to a display of modern gas appliances, cookery demonstrations were given by Miss H. H. Tuxford. Alderman Sadler in opening the Exhibition remarked that the townspeople should realize that by using more gas they not only helped the town but worked for a reduction of charges to their own benefit.

Healthy Heating, written by a woman doctor, is the subject of the current issue of *A Thousand and One Uses for Gas,* published by the B.C.G.A. The publication, which is copiously illustrated, forms an excellent subject for the start of the autumn heating campaign, and the unsolicited testimonials of many eminent members of the medical profession, whose names for reasons of professional etiquette have to be omitted, tell their own story of the reliance which is placed in gas.

A Special Exhibition of domestic gas appliances is being held by the Dewsbury Corporation Gas Department, with daily lectures and demonstrations, from Sept. 24 to 28, inclusive, at the Gas Showrooms in Northgate. The opening on Monday afternoon was by Alderman Dyer, Chairman of the Gas Committee. Cookery demonstrations have been given afternoon and evening each day by Miss E. D. Crossland, Diplomée, N.C.T.S., of Radiation Ltd.; with washing machine demonstrations by Miss E. Bagshaw, of W. H. Dean & Sons, Ltd.

An Increase of Capital was agreed to at an Extraordinary General Meeting of the Narborough, Blaby, Enderby, and Whetstone Gas Light and Coke Company, Ltd., on Sept. 19. Additional ordinary shares of £2 10s. each to the number of 5,600 are to be created, ranking in dividend with the existing ordinary shares. It has also been decided to capitalize the sum of £14,000, being part of the undivided profits of the Company now standing to the credit of the general reserve fund.

Notwithstanding the Rapid Increase in the use of electricity in Italy, due to the development of the water power resources, it is satisfactory to learn that the sale of gas by the municipal undertaking of Milan continues to make steady progress, especially since the prices were reduced in 1930. During 1933 the sales of gas in the city reached a total of no less than 3,956,660,000 c.ft. as compared with 3,614,692,000 c.ft. in 1932—an advance of about 9·4%. During the twelve months the number of consumers in the city increased from 269,596 to 277,874. There was, however, a slight fall in the average annual quantity taken per consumer—from 14,267 to 14,240 c.ft.

"Copper Through the Ages" is the title of an interesting book that we have received from the Copper Development Association. In the course of the Association's investigations a large amount of information relating to the history of copper and its alloys has been collected, and, although much of this historical data may not be of direct practical use, it is thought to be of sufficient general interest to warrant recording in a permanent form. Therefore the very interesting little book, "Copper Through the Ages," was published, and its publication forms part of the Association's programme of collecting and disseminating all kinds of information relating to copper and materials containing copper.

A New Method of Charging for Gas in Edinburgh, which will wipe out anomalies and result in a certain cheaping of cost, will operate from November. The new method will provide a charge uniform for all consumers, and will be simple to operate. It will also encourage consumers to increase and extend the use of gas. It was reported to the Public Utilities' Committee, on Friday, that over 57,000 gas cookers are in service all over Edinburgh, and, in addition, there are 15,600 grills and 19,000 hotplates. It was also stated that from May to the end of August gas sold by the Edinburgh Corporation amounted to 712,000,000 c.ft., representing an increase of 5·43% over the same period last year. Fuller details of the proposed new scale of charges are published in our news pages this week.

Further Reductions in Price of gas and the institution of block rates are announced by the Falkirk Town Council. For ordinary consumers the charges for the first block of 7,500 c.ft. will be 2s. 4d. per 1,000 c.ft., showing a reduction of 2·1d. per 1,000 c.ft. From 7,500 up to 57,000 c.ft. will be charged at the rate of 2s. per 1,000 c.ft.; from 57,000 up to 117,500 at 1s. 10d.; and over 117,500 at 1s. 9d. In the case of prepayment meters the charges will be worked on the same principle, while industrial and power consumers will be charged at the rate of 1s. 11d. per 1,000 c.ft., as against 1s. 11·22d. last year. Mr. H. G. Ritchie, Engineer and Manager of the Falkirk Corporation Gas-Works, in a report to the Town Council, states that the output of gas during July and August this year was 58,912,000 c.ft., as compared with an output in the corresponding period last year of 54,368,000 c.ft.—an increase of 4,544,000 c.ft., or 8·35%.

Planning a Kitchen.

B.C.G.A. £1,000 Competition.

A novel competition, which should provide the sales departments of gas undertakings with something of live interest to the modern housewife—and, for that matter, to her husband also—is being launched by the British Commercial Gas Association as a further link with their autumn advertising campaign.

In the modern labour-saving homes which are springing up at an almost miraculous pace all over the country at the present time, the planning of the kitchen needs more care and forethought than, perhaps, any other part of the house, for, per square foot of floor space, more pieces of "furniture" having an essential influence on the wellbeing of the

household have to be fitted than in any other room in the building. This Competition, therefore, is designed to give the housewife a practical opportunity of planning her "workshop" on the lines she considers best, and doubtless the results will provide the Industry with many valuable ideas on the positioning of gas appliances in the kitchen and on the types of apparatus which the modern housewife considers most suitable.

Briefly, the Competition is to be run on the following lines. Folders are to be provided for intending competitors, containing a plain floor plan of a 12-ft. by 10-ft. kitchen, while a further sheet contains the undernoted fittings to the correct scale for cutting out purposes:

1. Table
2. Chair
3. Kitchen cabinet
4. Glass and china cupboard
5. Door
6. Tradesmen's entrance
7. Sink
8. Window
9. (*a*) Large gas cooker or
   (*b*) Small ,, ,,
10. (*a*) Storage gas water heater or
    (*b*) Instantaneous gas water heater
11. Gas washing machine (with wringer folded down)
12. Point for gas iron
13. Gas refrigerator
14. (*a*) Gas fire or
    (*b*) Panel gas fire or
    (*c*) Gas radiator

The competitor now has to decide upon the best positions in the kitchen for the various fittings (including doors and windows) and make a choice of the various alternative appliances offered, after which those chosen have to be cut out and gummed on to the floor plan of the kitchen as the competitor thinks best. The fold-back at the foot of each cut-out represents to scale the exact amount of floor space that would actually be taken up by the appliance in the kitchen. The competitor then has to indicate in spaces set out on the folder the colour scheme, floor covering, and wall covering that would be chosen.

The Judges.

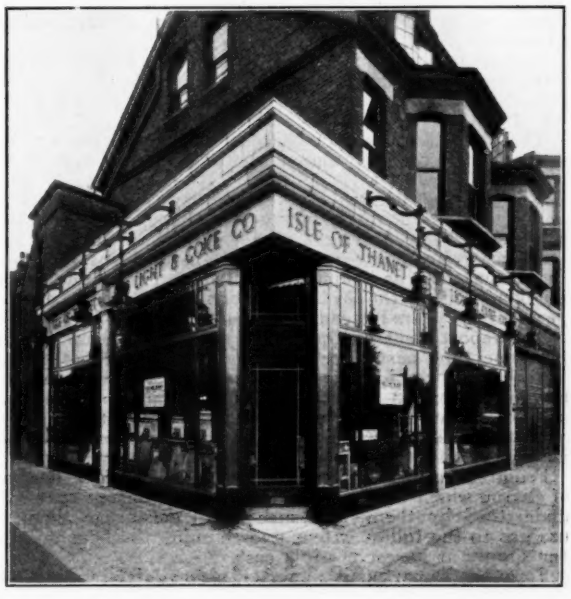
For this Competition, which closes at the end of next January, the B.C.G.A. are offering £1,000 in prizes, divided up as follows: First prize, £500; second, £200; third, £100; ten prizes of £10 each; and a hundred prizes of £1 each. The Judges are Mrs. Darcy Braddell, who is well-known as an expert on interior decoration and kitchen planning, Sir Francis Goodenough, C.B.E., and Mrs. Eileen Murphy, who is in charge of the Home Service Section of the Association.

A Competition of this nature will be invaluable in stimulating interest among housewives in the design and planning of their kitchens; and while, in practice, many have not the opportunity in their homes of deciding just where they would like their doors and windows, there is nevertheless great scope for individual ideas as regards the arrangement of appliances, which should give the housewife who is contemplating a move into a modern home a chance of stating her views in the matter of kitchen fittings while the house is still in the hands of the builder and while there is still time to put such ideas into practical application.

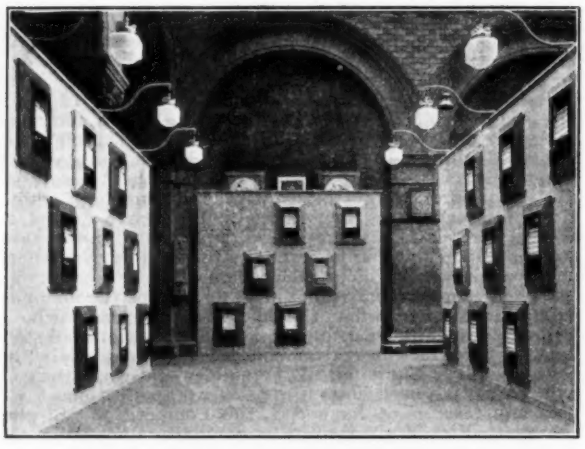
In any case, as we have said, this Competition will give the gas salesman a first-rate opportunity of getting the housewife thoroughly interested in kitchen planning and the essential part which gas plays in the general scheme. Each of the forthcoming B.C.G.A. national advertisements will carry a coupon announcing the Competition, and gas undertakings who have not already done so should hasten to provide themselves with full particulars and a good supply of the necessary folders for distribution to their consumers.

Margate's New Showrooms

The accompanying photographs give views of the new gas showrooms of the Isle of Thanet Gas Light and Coke Company in the Westbrook District of Margate. Two shops have been converted into an imposing corner site on the main Canterbury road, and the attractive exterior, with bronze pilasters and white frame work above, and the spacious and well laid-out interior are particularly noteworthy.



Striking Displays at Bristol.



Among some very striking display photographs sent us by Mr. S. E. Halliwell, Secretary and Commercial Manager of the Bristol Gas Company, the upper picture appears to us a novel method of showing gas fires. It was taken at an extensive display staged by the Company at the Bristol Annual Exhibition, Aug. 30 to Sept. 12. The lower illustration shows the excellent use to which a staircase was put.

New Scale of Gas Charges Proposed for Edinburgh.

His report for July and August was submitted by the Engineer and Manager of the Gas Department (Mr. J. Jamieson) at a meeting of the Edinburgh Public Utilities Committee, held on Sept. 21.

During July the amount of gas sent out was 227 million c.ft., and for August 233 million c.ft., representing increases over the corresponding months of last year of 4·60% and 4·68% respectively.

The gas sold from May 16 to the end of August was 712 million c.ft., representing an increase of 5·43% over the same period last year.

A significant feature of the report was the number of appliances fitted, particularly under the hire purchase scheme. During July, 201 cookers were fitted on the hire purchase system, as against 164 for the previous year, and for August 229, as against 126. This is partly due to the introduction of the system deferring payments over a period of 10 years instead of five as formerly.

The report went on to remark that it has been evident for some time past that some revision of the methods of charging for gas is desirable, the present methods having become in certain respects involved, inequitable, and out of date. The new proposals embody a revised method of charge, which has been prepared with two principal objects in view.

From the consumers' point of view to devise a method of charge which will be more equitable to consumers, easily understood by them, and such as to encourage them to use gas to the fullest extent and to enjoy the benefits of a gas supply at lowest possible cost.

From the Department's point of view to devise a method of charge which will be uniform for all consumers and consequently simple to operate, and which holds out prospects of increased revenues in the future because of the encouragement which it gives to all classes of consumers to increase and extend the use of gas.

The proposed scale of charges per quarter is as follows: Termly consumption through one meter—First 10,000 c.ft. —Consumption up to 10,000 c.ft., per 1,000 c.ft., 2s. 9d.; per therm, 6·947d.

Remainder at one of the following prices:

	Per 1,000 C.Ft.	Per Therm.
	s. d.	d.
10,000 c.ft. and up to 50,000 c.ft. . .	2 6	6·316
50,000 ,, ,, 100,000 ,, . .	2 3½	5·789
100,000 ,, ,, 250,000 ,, . .	2 1½	5·368
250,000 ,, ,, 500,000 ,, . .	1 11½	4·947
500,000 ,, ,, 750,000 ,, . .	1 10	4·632
750,000 ,, ,, 1,000,000 ,, . .	1 9	4·421
1,000,000 ,, ...	1 6	3·789

County rates will be 3·8d. per 1,000 c.ft. (0·8d. per therm) in excess of the above rates for all consumptions. The new charges will be conditional upon accounts being paid within one calendar month from the date of rendering.

A minimum charge of 2s. 6d. per quarter will be introduced. The object of this provision is to ensure that some return will be secured to the Department on those meters which are installed for stand-by apparatus or emergency use only and which commonly record a very small consumption or no consumption at all.

It is suggested that these rates be given effect to on all meter readings subsequent to Nov. 15. The cost to the gas undertaking of the proposed scale on the basis of gas sales for 1933-4 would be about £9,000 during the current year and £14,000 in a full year. It is anticipated, however, that the reduction in charges will be compensated for by the increase in gas sold, if, as is anticipated, the increase over the last year is maintained.

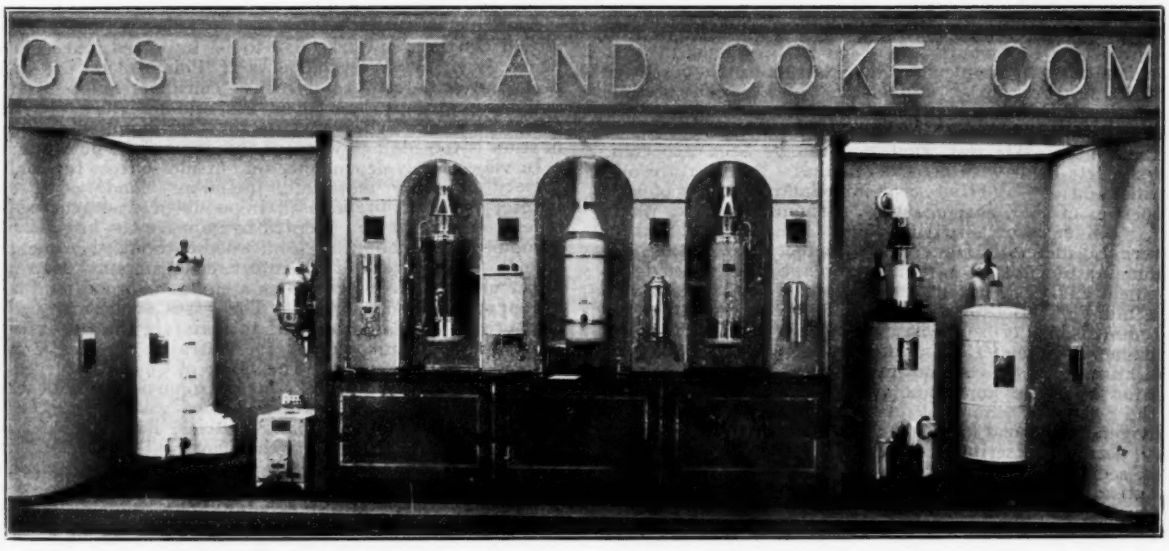
Movement Catches the Eye.

The novel features, and added utility of the modern gas cooker is forcibly demonstrated in the attractive display illustrated here. Produced by the Parkinson Stove Company, it shows a " Minette " gas cooker, with hinged cover, mechanically operated, by the realistic wax model.

This display was recently arranged with suitable posters in the showrooms of the Smethwick Corporation Gas Department, and created considerable public interest.

Seen at the Building Exhibition

The accompanying photographs are two views respectively of the stands of the South Metropolitan Gas Company and the Gas Light and Coke Company at the Building Exhibition just concluded at Olympia, to which reference was made in last week's issue. In the upper picture can be seen, on the table in the centre, the model of the block of flats nearing completion in the Peckham district, in which the South Metropolitan Company have been successful in obtaining the lighting, heating, cooking, and water heating contracts, while many of the other appliances mentioned last week can also be clearly seen, including the attractive lighting fittings. The lower photograph shows the striking manner in which the Gas Light and Coke Company exhibited the appliances in the special section of their stand devoted to gas water heating. The seven heaters all arranged to deliver into a common trough provide an excellent example of up-to-date display methods, and the larger storage and circulating boilers on either side complete the gas water heating service available for the modern home.



Bradford's New Showrooms.

New Showrooms for the Bradford Corporation Gas Department were officially opened, on the Leeds Road frontage of Britannia House, by the Lord Mayor of Bradford (Capt. A. W. Brown, M.B.E.), on Sept. 19.

Britannia House is a large new building erected by the Corporation quite recently as the first section of the Central Area Reconstruction Scheme. It is a structure of eight storeys, right at the heart of the city, comprising extensive suites of offices and on the ground floor a series of large shops.

The exterior of the new gas showrooms is in keeping with the dignified appearance of Britannia House as a whole. Outside there is plentiful artificial illumination by the most modern type of gas lamps, manufactured by Messrs. Foster & Pullen, Ltd., of Bradford, who were also responsible for the gas lighting equipment of an attractive red-lettered exterior sign, "City of Bradford Gas Showrooms."

There are three large display windows, which can be arranged for closed or open displays as required. The showrooms proper occupy a basement and two floors. The centralization of offices and showrooms under one roof has greatly facilitated the handling of inquiries and orders, and separate counters are clearly marked by attractive signs for dealing with matters relating to gas supply, appli-

ances, general inquiries, complaints, &c. In the basement is a special display of many types of water heaters for domestic and trade purposes, any of which can be seen in operation, and details as to price, running costs, &c., are available on the spot. Wash-boilers, made in Bradford, are offered on simple hire, and the latest washing machines are offered on easy instalment terms. The gas immersion heater is given special prominence as an appliance of popular utility in the modern small home. The first floor showroom is given over especially to the display of up-to-date gas fires and lighting fittings, the use of distance switches being a prominent feature. There are fires of tasteful colours to match any decoration scheme.

The showrooms and chief offices are lighted by Sugg's ventilating lamps with distance control switches, affording a soft diffused light throughout the building; and the remainder of the offices and corridors are lighted by Sugg's "Streatham" pendants with cluster burners and octagonal globes, also controlled by distance switches.

Declaring the new showrooms and offices open, the Lord Mayor said he had two suggestions to offer which he felt would benefit the Gas Undertaking. One was that, now there was such excellent centralization of the Gas Department offices, accounts might be paid there instead of at the City Treasurer's office in the Town Hall, thereby helping the Department to keep direct contact with its customers. The other suggestion was that there should be a speedy end to the practice of taking profits from the Gas Undertaking by the Corporation Finance Committee in aid of rates. He felt the present time, just when they had become established in the new offices and even more recently had appointed a new Gas Engineer and General Manager in Mr. Currier, was a very suitable time for this change to be made, in the interests of development of the Undertaking. During its 63 years' existence as a municipal undertaking the Gas Department had contributed no less than £614,000 from its profits to relief of rates. As the Department was now beginning a new era, he sincerely hoped the Corporation would take no more money from its funds for many years to come.

The Chairman of the Gas Committee (Ald. F. J. Cowie) presided over the function. Among those present were the Town Clerk (Mr. N. L. Fleming), the City Treasurer (Mr. C. R. Theaker), the City Architect (Mr. J. A. Fletcher), the newly-appointed Gas Engineer and General Manager (Mr. G. E. Currier), Messrs. Charles Wood and E. J. Sutcliffe, former Bradford Gas Engineers; Mr. Edward Crowther, late Gas Engineer and now of Salford; members of the Gas Committee and City Council, and representatives of a number of other Yorkshire gas undertakings.

A Topical Display from Southampton.

[By permission of Southern Newspapers, Ltd.

Of particular interest at the present time is this self-explanatory window display by the Southampton Gas-light and Coke Company. The most interesting feature of this effort, however, our photograph unfortunately cannot portray—namely, the continuous and varied movement of the sea cleverly introduced into the display, the whole of which was carried out by members of the Company's staff. The wording of the display, which does not stand out well in the photograph, is "No matter how much you 'Endeavour' you'll never beat a gas fire."

Swedish Gas-Works Practice.*

Reviewed by H. M. Spiers, M.A., B.Sc., F.I.C.

Recruits to the Swedish Gas Industry have hitherto been hampered by the fact that there has been no book in their own language to supplement the instruction they receive in their lecture courses and on the works. The present volume, published by the Association of Swedish Gas-Works, is intended to fill the gap and does it very well.

The contents are just what might have been expected, the subjects dealt with being as follows: Manufacture and Purification of Gas (Historical introduction, types of gas, properties of coal, carbonization, carbonizing plant, water gas, condensation, purification, exhausters, station governors, meters, holders); Bye-products—coke, tar, and ammonia; Control of carbonizing plant and methods of chemical analysis; Gas masks; Mains and Services; Theory of Fluid Flow; Boosters and district governors; Rules for the dimensions of services; Gas supply practice; Flues; Consumers' meters; Gaseous Combustion; Gas Appliances. Literature references are not given in the text, but a classified list of all the important articles which have appeared in the Swedish Technical Press is given in an Appendix.

In general, broad principles are presented rather than very detailed descriptions. The success with which the book seems likely to meet should encourage the sponsors to extend it in certain directions in future editions.

The Gas Industry of Sweden is of comparatively recent origin, since it was not until 1846 that the first works was erected—in Gothenberg. It was only in 1853 that Stockholm itself was supplied with gas. The Industry has steadily developed and now there are 37 works throughout the country, the majority being comparatively small. The total quantity of coal carbonized per annum is 525,000 metric tons. Gas sales amount to approximately £1,000,000 per annum and the revenue from bye-products to £500,000. The capitalization of the Industry is in the neighbourhood of £6,000,000.

Gas lighting has now in large measure been superseded by electricity, due to the low cost at which current is supplied. This is illustrated by the fact that, in 1885, 95·2% of the gas sold in Stockholm was for lighting and only 1·8% for heating and power. The present figures are 88·8% for heating and 1·8% for lighting.

Sweden is without coal resources; hence all the coal required by the gas-works has to be imported, the sources being Durham, Westphalia, and Poland. It has been found advantageous to purchase Durham coal to sample and assay rather than to an ash and moisture specification. The extra charge made for coal supplied to specification is too high to warrant this method of purchase.

In view of this dependence on outside sources for coal, a variety of other materials, including wood, peat, and lignite, has had to be used in cases of emergency. An ingenious method was adopted to improve the low calorific value of the gas obtained from wood carbonized in inclined retorts. In the rear of the retort, coal, amounting to 10% of the charge, was placed, then a charge of wood, and then a charge of wood charcoal. The gases evolved from the coal provided a layer of scurf to maintain the retorts gas-tight and ammonia vapour to neutralize the acetic acid derived from the wood. The layer of charcoal served to reduce to carbon monoxide a large proportion of the carbon dioxide present in the low-grade wood gas.

Recent trend, as in most countries, has been towards the adoption of larger units than horizontal retorts; hence intermittent chambers, vertical retorts, and horizontal chamber ovens are to be found as well as a coke oven battery—the latter at Stockholm. The progressive spirit of the Swedish Gas Industry is evidenced also by the fact that three waterless holders, including one of 7 million c.ft. capacity, and one battery of pressure holders have been installed.

In view of the small tonnage (22,000 tons) of tar produced per annum, it is not surprising that there are but three tar distillation plants in Sweden. The most recent of these—the T.I.C. plant installed at Stockholm early this year—is referred to in the book. As regards refractory materials, it is evident from the analysis given in the book that Sweden can provide silica bricks of excellent quality.

The book has been well produced and is amply illustrated. It represents an ambitious effort on the part of a country where the Gas Industry is of comparatively small magnitude, and great credit is due to all who have been responsible for its preparation.

* Handbok för Gasmästare och Gasinstallatörer, edited by C.-W. Pilo. [Stockholm, 1934, Svenska Gasverksföreningen. Pp. 495; 477 illustrations. Price, 12 Kronen.]

The Marketing of Coke*

By F. M. H. TAYLOR, Ph.D., M.Inst.Fuel, M.I.H.V.E.

Dealing with theoretical aspects affecting the design and operation of coke boilers and furnaces

The Combustion of Coke

The design of coke boilers and furnaces, as well as their method of operation, is determined by a few simple principles governing the reaction of carbon and atmospheric oxygen. On them the design of a wide range of apparatus is determined, and their study gives a simple solution to a variety of problems connected with the efficient operation of coke-fired plant.

The efficiency of a boiler or furnace depends on:

(1) The combustion efficiency of the fuel—that is, complete combustion of the fuel must be effected by the admitted air, and at the same time the admission of excess cold air must be avoided.
(2) The maintenance of a high efficiency of radiant heat transfer, both from the fuel bed and from the hot flue gases issuing from the fuel bed.
(3) A high efficiency of convected heat transfer.
(4) The efficient control of combustion and the avoidance of overheating and wasted fuel.
(5) The reduction to a minimum of radiation losses and losses due to unburnt fuel in the ashes.

Combustion Efficiency.

The combustion efficiency is at its highest when the carbon—the main constituent in coke—is completely converted to carbon dioxide, when hydrogen is converted to water, and hydrocarbons to carbon dioxide and water. Of these reactions the conversion of carbon to carbon dioxide in its entirety is of paramount importance. Thus a coke with the following ultimate analysis:

	%
Carbon % by weight	— 88
Hydrogen	— 0·2
Nitrogen	— 2·0
Sulphur	— 1·0
Ash	5·8
Moisture	4·0

should give a flue gas analysis of:

	%
CO_2	19·7
N_2	80·2
SO_2	0·1

by volume, assuming complete combustion with exactly the correct proportion of air. It need hardly be pointed out that the design and operation of boilers and furnaces must be directed towards obtaining these theoretical values for the flue gas analysis.

A study of the relevant factors shows that the combustion efficiency depends almost entirely on two main considerations:

(*a*) The depth of fuel in the grate.
(*b*) The size of fuel.

And, to a smaller extent, on:

(*c*) The reactivity of the fuel.
(*d*) The temperature of the fuel bed.
(*e*) The rate of combustion.

The Fuel Bed Depth.

Figs. 1 and 2 show the effect of the thickness of fuel on the flue gases obtained from a coke fire. The results of accurate tests with varying air velocities are also shown in graphical form in fig. 3. It will be seen that from a very thin bed of fuel up to a thickness of 4 in. the carbon dioxide figure steadily increases until it reaches a maximum of between 16% and 20%, the carbon monoxide and oxygen percentage being then negligible. The simple reactions taking place are:

$$C + O_2 = CO_2 + 14{,}540 \text{ B.Th.U./lb.}$$
$$2H_2 + O_2 = 2H_2O$$

If the gases now pass through greater thicknesses of fuel the carbon undergoes further reactions with carbon dioxide, giving carbon monoxide gas.

$$CO_2 + C = 2CO - 10{,}190 \text{ B.Th.U./lb.}$$

The amount of carbon dioxide is thus reduced to an equilibrium figure of approximately 5%, while the carbon monoxide percentage reaches approximately 12%. Under these circumstances only about 40% of the heat energy of the coke is liberated, unless some means is adopted for

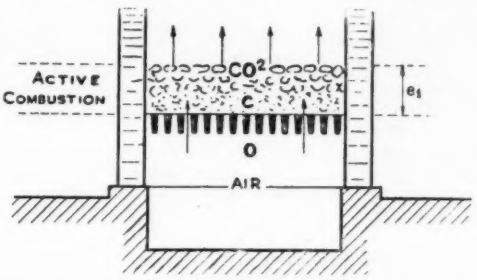


Fig. 1.—Thin fuel bed, showing conversion of carbon to carbon dioxide, without the formation of secondary carbon monoxide.

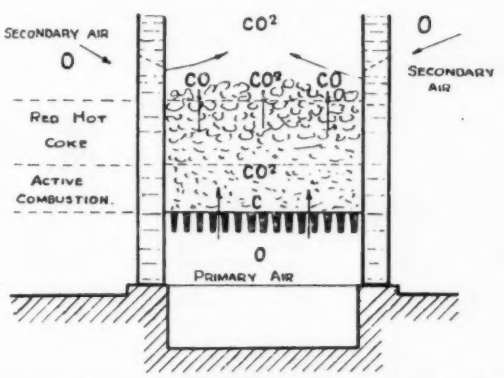


Fig. 2.—Thick fuel bed, showing secondary reduction in carbon dioxide to carbon monoxide, and how admission of secondary air re-converts carbon monoxide to carbon dioxide.

recombustion of the carbon monoxide so formed by a secondary admission of air, according to the equation

$$2CO + O_2 = 2CO_2 + 10{,}190 \text{ B.Th.U./lb.}$$

Effect of Various Sizes of Fuel.

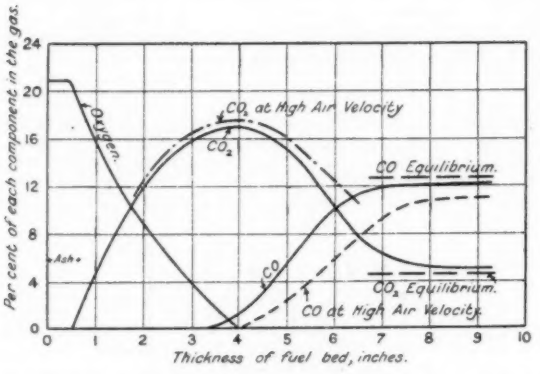
The correct thickness of fuel with which the maximum percentage of carbon dioxide is obtainable depends on the size of fuel, as it can be easily seen that a smaller, densely packed fuel would present a much greater surface to the air than would the larger sizes. Thus the optimum thickness for a 2 in. by 3 in. coke would be approximately 7 in., for nut sized coke 4 in., and for large coke 10 in. The effect of this on the actual boiler plant can be seen from fig. 4. A controlled thickness of fuel bed, so adjusted that carbon dioxide is formed, with no carbon monoxide, is seen in the hopper-fed boiler, which is described in an earlier article in the "JOURNAL" of Aug. 1, 1934, where the water legs in the shell of the boiler control the fuel bed thickness accurately, the thickness remaining constant independently of the quantity of fuel stored in the hopper. This method is also used in hand-fired steam-raising boilers where high efficiencies are essential, the stoker him-

* Earlier articles in this series by Dr. Taylor have appeared in the "JOURNAL" for August 1 and 29, while an introduction was published on June 27.

self making small additions of fuel so as to preserve the optimum depth of fuel. By adding fresh fuel little and often he is able to maintain the correct thickness throughout this operation. In practice, a small leakage of excess air inevitably occurs so that a typical gas analysis may be taken as:

	%
CO_2	15·5
O_2	4·0
CO	0·4
N_2	80·1

The reactivity of the coke, the temperature of the fuel bed, and the rate of supply of air do not appreciably affect the thickness of the fuel bed at which the complete trans-



Composition of the gases within the fuel bed of a coke-fired furnace at high and low rates of firing. All the oxygen is consumed at about four inches above the grate.

Fig. 3.

formation of oxygen to carbon dioxide is effected. This is because the reaction $C + O_2 = CO_2$ is not governed by the rate at which the molecules of carbon dioxide are formed, but by the rate at which oxygen will diffuse through the stationary film of carbon dioxide surrounding each carbon particle. This stationary gas film is independent of the reactivity of the coke and of the temperature of the fuel bed, both factors which appear at

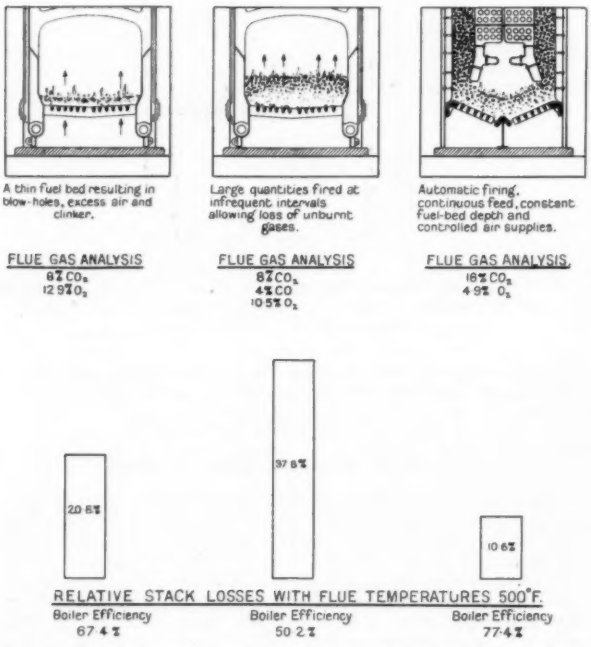


Fig. 4.—Showing flue gas losses for varying fuel bed thicknesses with inadequate regulation of secondary air supply.

first sight to affect the rate of formation of carbon dioxide to an appreciable extent.

Effect of Rate of Combustion on Fuel Bed Depth.

The air velocity—in other words, the rate of combustion on the grate—does affect the rate of diffusion through the film because the thickness of the film itself is almost exactly inversely proportional to the velocity of the air—that is, to the rate of combustion—*e.g.*, if the velocity is doubled the amount of oxygen diffusing through the film surrounding the carbon particles in a given time is also nearly doubled, and the amount of carbon, dioxide formed per unit thickness of fuel bed is again doubled. Thus the height of the fuel bed at which the carbon is completely transformed to carbon dioxide remains constant.

Formation of Carbon Monoxide.

Where the fuel bed thickness exceeds that at which complete transformation of oxygen to carbon dioxide takes place the secondary reduction of carbon dioxide to carbon monoxide is more complicated. The reaction $C + CO_2 = 2CO$ is a "time reaction," and the formation of carbon monoxide is dependent on the following factors. Its proportion increases with:

(*a*) Increased time of contact.
(*b*) Increased temperature of fuel bed.
(*c*) Reduction in size of fuel.
(*d*) Increased depth of fuel bed.

It may be seen, therefore, that it is far more difficult to adjust the secondary air dampers on any type of boiler to give correct combustion conditions when the carbon monoxide percentage varies with such a number of factors. The carbon monoxide figure changes not only with the type of installation but with the same installation under varying loads and conditions of chimney pull, &c.

The effect of this may also be noticed in producer plants,

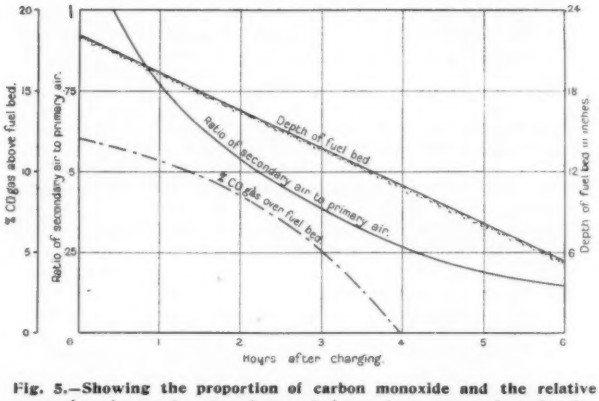

% CO gas above fuel bed.
Ratio of secondary air to primary air.
Depth of fuel bed in inches.
Depth of fuel bed
Ratio of secondary air to primary air.
% CO gas over fuel bed.
Hours after charging.

Fig. 5.—Showing the proportion of carbon monoxide and the relative proportion of secondary to primary air for various stages of combustion in hand-fired heating boilers in between two charging periods.

such as coke-fired gas producers that are used in glass works and potteries, also plants such as the "Wollaston" steam raising producer plant and the "Notoil" stokers. With large coke the depth of the fuel bed required to give a sufficiently high percentage of carbon monoxide is very much larger than with the smaller grades, with the result that the larger grades make necessary the provision of an unduly deep fuel bed. Users very often ask for the more expensive graded coke because of this difficulty.

Hand-Fired Coke Boilers.

Hand-fired boilers are operated by charging to a thickness of 18 in. to 2 ft. of fuel. This gradually burns down until the thickness of fuel is reached where a maximum of carbon dioxide is formed. A decreasing quantity of carbon monoxide is formed throughout the intercharging period. By the provision of secondary air inlets this carbon monoxide may be burnt off with a degree of efficiency depending on:

(*a*) The quantity of air admitted.
(*b*) The completeness of mixing the secondary air with the gases.
(*c*) The absence of sudden chilling action upon the boiler flues before combustion is completed.

As the fire burns lower, less and less carbon monoxide is formed, and less and less secondary air is therefore needed. Eventually the fuel bed burns below that thickness at which all the ingoing air is converted to carbon dioxide, and considerable amounts of excess air may then be found in the boiler flues. This is illustrated in fig. 5.

One great improvement in the hand-fired type of sectional boiler has been the provision of carbon monoxide prevention doors, and these will be described in detail in a subsequent article.

Wales and Monmouthshire Association of Gas Engineers and Managers

ANNUAL MEETING AT PORTHCAWL

The Annual General Meeting of the Wales and Monmouthshire Association of Gas Engineers and Managers was held at Porthcawl on Sept. 20, in the new pavilion on the Esplanade. The chair was occupied by Mr. IFOR G. JENKINS, the retiring President, and there was a good attendance of members. Among the visitors were Mr. W. Ross Taylor, M.P. (N.G.C.), Mr. P. S. Hoyte (Plymouth), Mrs. Eileen Murphy (of the B.C.G.A.), and Mr. Evan Rees (Wandsworth).

Mr. I. G. JENKINS, in introducing his successor, Mr. Harold Barker (Engineer and Manager of the Llanelly Gas Light and Coke Company), said Mr. Barker had been a member of the Association for 22 years, and most of the members were aware of the difficulty they had had in persuading him to accept the Presidency.

Mr. BARKER then took the chair, and after thanking the members for the honour conferred upon him, he proposed a vote of thanks to Mr. Jenkins who, owing to the death of the late Mr. Collin, had fulfilled the duties of President for a second year. After paying tribute to his services, Mr. Barker, on behalf of the Committee and members, presented Mr. Jenkins with a barometer.

Mr. JENKINS, in acknowledging the gift, said he had had a valuable experience during his term of office. He thanked Mr. H. D. Madden, Mr. J. H. Canning, and the other members of the Council, and especially the Hon. Secretary (Mr. Octavius Thomas) for the assistance they had given him. Mr. Thomas, he said, had worked hard in the interest of the Association, the success of which was largely due to his efforts.

The minutes of the last meeting were then read by the Hon. Secretary and confirmed.

New Members.

The following additions were made to the membership of the Association:

Member.—Mr. R. J. Rogers (Technical Director, Parkinson Stove Company, Ltd., Stechford, Birmingham).

Associates.—Messrs. J. Brown (Managing Director, Falkirk Ironworks); W. M. Fox (Technical Staff, W. J. Jenkins & Co., Ltd., Retford); M. R. Thomson (Technical Representative, Alder & Mackay, Ltd., Croydon); and C. Gray (Scientific Instrument Maker, Leigh-on-Sea).

Mr. P. S. HOYTE, of Plymouth, was then called upon to present the examination certificates and prizes to members of the Wales and Monmouthshire Junior Gas Association. Before doing so, Mr. Hoyte said the standard among gas engineers to-day was immeasurably higher than it was 45 years ago, and the amount of preparatory work which the young men of to-day had to get through was enormous when compared with that in the days when he himself entered upon his career. When he and the older members thought of the gas-works of to-day their minds went back to that doll's house with the little retort which they used to charge with 2·24 lbs. of coal. When he came among them two years ago he was immensely impressed with the way in which they encouraged these young men who were preparing themselves for the hard job in front of them.

The prizewinners were as follows:

For work done for the Wales and Monmouthshire Junior Gas Association.

H. S. Bartlett	Cardiff
Darrell Rees	Neath
F. Robertson	Cardiff
K. H. H. Langford	,,

For having passed Higher Grade Gas Engineering, Institution of Gas Engineers.

J. H. Canning, Junior	Newport
G. E. Thomas	Neath

For having passed Ordinary Grade Gas Engineering, Institution of Gas Engineers.

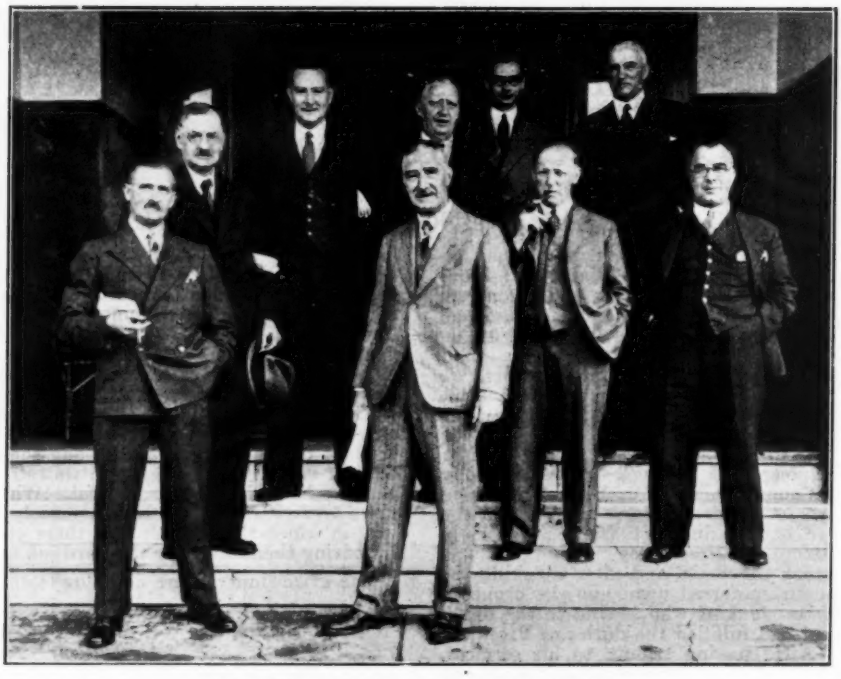
A. D. C. Gunn	Cardiff
F. Stuart Johns	Swansea
W. A. Pask	Caldicot
J. Wilson	Newport

For having passed Cardiff College Internal Examination, Gas Engineering.

STAGE 2.

W. Algate	Porth
R. E. P. Hoskin	Cardiff
A. L. Thomas	Neath
W. C. Weaver	Swansea

Left to Right: Mr. Ifor G. Jenkins, ex *two years' Presidency; Mr. P. S. Hoyte; Mrs. Eileen Murphy; Mr. J. H. Canning; Mr. R. J. Auckland.*



AT THE ESPLANADE HOTEL, PORTHCAWL.

For having passed Cardiff College Internal Examination, Gas Supply.

STAGE 1.

T. F. Edwards	Newport
J. F. Carless	,,
J. J. Asquith	,,

STAGE 2.

R. J. H. Shepherd	Swansea
F. Warwick	Cardiff

For having passed Cardiff College Internal Examination, Gas Fitting.

GRADE 1.

A. Ellett	Barry
E. Francis	,,
K. D. Rees	,,
K. K. Williams	Cardiff

GRADE 2.

A. D. Crosta	Cardiff
S. J. Glover	Barry
F. J. Gondon	,,
D. Kemp	Cardiff
S. R. Price	,,
A. T. Cottrell	,,

GRADE 4.

V. R. Beer	Cardiff
G. V. Humphreys	,,
B. Lloyd	,,
L. Millen	,,
J. G. Thomas	,,
R. H. Walrond	,,
W. N. Little	,,

For having passed City and Guilds of London Institute, Gas Fitting.

GRADE 1.

K. C. Anthony	Pontypool
R. G. Davies	Newport
R. W. Drewell	,,
J. H. Hazell	,,
B. R. Isitt	,,
E. S. Tamplin	,,

For having passed City and Guilds of London Institute, Gas Fitting Final Examination.

W. H. Bradley	Newport
W. Connor	,,
M. F. Dawes	,,
E. V. H. James	,,
F. Jones	,,
L. J. Price (with distinction)	,,

Special Purposes Section.

Mr. J. E. KENSHOLE (Merthyr Tydfil) moved the adoption of the 24th Annual Report of the Special Purposes Section, this being seconded by Mr. J. STEPHENSON (Aberdare) and unanimously agreed to. The report stated that two meetings had been held during the year. The membership now consisted of ten local authorities and 22 companies. Fortnightly reports of the stocks of coke, together with the prices received, had been circulated and prices maintained. The stocks in many works were high during the winter, but the coke shipping factor was enabled in the spring to dispose of the excess. The Committee decided to take part in the Industrial Exhibition in the Greyfriars Hall, Cardiff, from May 29 to June 9, 1934, arranged by the Industrial Development Council of South Wales and Monmouthshire, which was very successful, and thanks were due to Mr. H. D. Madden and his staff for the efficient way the stall was arranged. Discussions had taken place on several important questions, including electrical propaganda, coke, coal, tar, &c. The receipts for the year amounted to £48 13s. 6d. and the payments to £46 0s. 6d., leaving with the balance brought forward the sum of £56 18s. 4d. in the hands of the Treasurer, together with £300 2½% Consols.

Mr. W. D. ROWE, Manager of the British Commercial Gas Association, then read his paper on "The Aims and Objects of the B.C.G.A.," and this paper, together with the discussion thereon, is published on later pages of this issue.

Luncheon.

At the close of the Business Meeting luncheon was served at the Esplanade Hotel, with the President in the Chair.

Prior to the usual toasts, Mr. J. H. CANNING, after paying a well-deserved tribute to the Hon. Secretary, Mr. Octavius Thomas, referred to the recent marriage of Mr. Thomas's daughter to the Rev. Thomas Jones, Vicar of Porth. They decided to make a presentation to Miss Thomas and her husband on behalf of the Association. The wedding gift consisted of a Georgian bookcase bureau.

Mr. OCTAVIUS THOMAS, on behalf of his daughter, acknowledged the Association's gift.

The toast of "The Town and Trade of Porthcawl" was proposed by Mr. W. ROSS TAYLOR, M.P., and responded to by Councillor E. M. BOWEN, Chairman of the Porthcawl Gas Committee. Mr. Bowen informed the company that the local Council had decided to light the new Promenade with gas. This was in view of the fact that they had such a splendid gas plant. Members of the Junior Gas Association were due at Porthcawl in December, and the Council hoped to give them a civic reception.

Mrs. EILEEN MURPHY (B.C.G.A.), in proposing "The Wales and Monmouthshire Association," said the Association had always supported the work of the organization which she represented. Her job was co-ordination, and she hoped to become a first-rate domestic consultant by picking the brains of those who were engaged in the Gas Industry.

The PRESIDENT, in responding, said forty years had elapsed since he was in charge of the gas-works at Pontypridd. Thirty years ago, when Mr. Thomas Canning, father of the present Treasurer, was President of the Association, they had only 46 members; now there were 134.

Mr. IFOR G. JENKINS presented the Upjohn Golf Cup to the winner, Mr. C. Gray. He remarked that prior to the

contest on the previous day Mr. Gray had never played in a competition, and his score was a very good one having regard to the boisterous weather that prevailed.

Exhibition of Appliances.

In the afternoon, there were an exhibition of gas appliances and a new holder to inspect, and Mr. Charles Gray, of Leigh-on-Sea, was demonstrating his Specific Gravity Tester at the works.

The C.G. Portable Specific Gravity Tester has been specially designed to enable a man of no technical knowledge to make an accurate test of the specific gravity of any gas. It is of all-metal construction, simplicity being a strong point. As the instrument is portable, a test can be made on the works or on the district. It is claimed that life of the instrument is indefinite. It is attached on a stand with the C.G. "Burna" gas calorimeter, and spot tests can be carried out at any time or place by workmen. It takes about five minutes to do a complete test of specific gravity and calorific value. The accuracy of the instrument, it is stated, is within 0·25%.

Golf Meeting.

Mr. Octavius Thomas and Mr. Joe Sadler as usual did much work in connection with the golf meeting, held the previous day on the famous links of the Royal Porthcawl Golf Club. As a result a number of visitors spent a delightful day, though on this occasion a downpour even worse than last year prevented all but the hardiest souls from completing the afternoon round.

The result of Medal Play for the Association Cup was as follows:

C. Gray	87−18=69
J. Sadler	94−17=77
W. Clark Jackson	83− 4=79
C. R. Averill	89−10=79
T. B. Walker	97−14=83
F. D. Drake	101−18=83
Col. Planck	92− 8=84
C. L. Bury	102−18=84
J. Prosser Jones	102−18=84
G. F. Falk	109−24=85

Annual Dinner.

The Annual Dinner in the evening, under the Chairmanship of Mr. R. J. AUCKLAND, was largely attended, and for the first time included the ladies—in honour of the visit of Mrs. Eileen Murphy, of the B.C.G.A. In welcoming Mrs. Murphy, Mrs. Madden, and other visitors, Mr. Auckland congratulated Mrs. Murphy upon the more and more prominent part she was taking in the affairs of the Industry. He was delighted also to see Mr. Rowe among them, and their old friend Mr. P. S. Hoyte; and Mr. Hutchinson, the Professional (and hon. member), and Mr. Hubert Retford, Secretary of the Royal Porthcawl Golf Club.

Mr. Retford was asked to convey the gratitude of the Association to the Captain and Committee of the Club for their hospitality.

Mrs. EILEEN MURPHY replied briefly on behalf of the ladies, and then presented the golf prizes and sweep winnings—the latter in each case being generously returned for the benefit of the Institution Benevolent Fund.

The Aims and Objects of the B.C.G.A.*

By W. D. Rowe, Manager of the B.C.G.A.

I feel deeply honoured that the Wales and Monmouthshire Association of Gas Engineers and Managers should have asked me to address them at this meeting. In dealing with the aims and objects of the B.C.G.A. I shall be speaking entirely about commercial matters, and I have rather a feeling that there are many present to-day who would have preferred to have heard a paper on a more technical subject. However, I hope you will bear with me, and at any rate find something of interest in what I have to say.

First of all—and I say this very sincerely—I am always delighted to be in South Wales where I have many very close personal friends, and where, since my entry to the Gas Industry, I have made many new ones. Only recently I accompanied the Technical Sub-Committee on a visit to the Cardiff Gas Company's Industrial Centre, and a more enjoyable and instructive day could not possibly have been spent. Prior to that I was present at the Annual South Wales District meeting of the Association, and the warmth of welcome at both these meetings has deeply touched me.

I am, therefore, very glad to have the opportunity of talking to you about the Association's affairs. I hope we may have a free and frank discussion regarding our activities and how they appeal to you. Above all, I trust that you will take this opportunity of telling me very openly what you think of our work, where you think we are wrong—for in this world of ours we all have our faults—and how we can increase our value to you in particular, and the Gas Industry in general.

I propose to deal in detail with the aims and objects of the Association and to give you an idea of what we are doing at Grosvenor Gardens, and what we are hoping to do. I say "what we are hoping to do," because one of the most important things to-day is the necessity to "Look Forward." A short time ago I was with a very able and respected manager of a very progressive undertaking, touring his area and inspecting his showrooms. One remarkably fine corner site, where stood a splendid showroom, had been acquired years before, when a school kept by a very stubborn schoolmaster stood on the spot. The value of the site was realized, and after a great struggle another house was found for the school, and the site became vacant for the gas showroom in the heart of a rapidly growing suburb. Only a few miles away, as we passed a corner in a less built-up area, our friend turned to me and said: "We have just acquired that land; it will be a gold mine for us one day." He was "Looking Forward." And so must we all in the Gas Industry, and not least the B.C.G.A.

Before I deal with the details of our work there is one matter which I wish to touch upon, as I know it will help very considerably to foster *complete* understanding on a very fundamental point in our relations. I want to make it quite clear to all present that I regard every penny subscribed to the B.C.G.A. funds as "trustee money," and for that reason I want members to know that I intend to keep the most minute watch on every item of expenditure. There shall be no waste. Every penny shall be spent to obtain the best possible value for those who have entrusted the money to our use.

Advertising.

Now for the Association's work. I do not think that I can do better than to follow the order of the objects of the Association as laid down in the Constitution and Rules. The first object is a pious hope entitled: "To promote the commercial prosperity of the Gas Industry by co-operative action." To this, I think, we can all subscribe. The second is, in two words—"to advertise." Now advertising, as we know advertising to-day, may be a bottomless well. If we succumbed to all the blandishments of the professional canvasser, we should find ourselves bankrupt within a week, for not one hour passes during which we are not implored by post and telephone and personal canvass to spend money on this or on that. We must therefore make a strong stand and adopt a definite policy to be altered only by the needs of the moment. The advertising policy of the B.C.G.A. is to take commanding spaces in the national papers and in large district papers which have a wide coverage, in important magazines, and in the Technical and Trade Press. We must leave the local papers to local undertakings, because, to be fair to everyone, if we go in one we must go in all, and if we did this, we should have no funds for our national "background" advertising, which, I think everyone will admit, is an absolute necessity in face of the present intense competition. There is another strong point in favour of the local undertakings dealing directly with the local papers. By doing so they can establish personal contacts which are bound to be of great value to both parties.

And I would like members to realize that, in dealing with their local publicity, we are always ready to help with the advertising copy and lay-outs, provided they will give us the material to work on. Local conditions and special points which require emphasis according to local policy are absolutely necessary for such advertisements.

To return to National advertising, I think that members will agree that the testimonial series adopted last spring has been a valuable help to getting the public gas-minded. The advertisements have been described as sincere and convincing, and have fulfilled their mission by telling the

* Paper read before the Commercial Section of the Wales and Monmouthshire Association of Gas Engineers and Managers at Porthcawl, Sept. 20, 1934.

world that gas is up to date. Having done this, we have now prepared a new series of campaigns on the specific uses of gas, emphasizing its claims of efficiency, reliability, flexibility, and cheapness, and featuring the most up-to-date appliances and methods. We intend to give plain bold statements which will be easily read and readily remembered. As an old newspaperman, I shall be able to guide our agents in the right way in the choice of media, and we shall endeavour to preserve a happy balance between class papers and popular papers and between daily newspapers and magazines. We have also—and this will be of particular interest to those in industrial areas—made a complete survey of the Trade and Technical Press. Increased activity in many industries calls for increased vigilance on the part of industrial gas salesmen, and we intend to place the claims of gas in the journals of every industry where it is used or can be used. We are in close touch with the Technical Sub-Committee of the Joint Co-ordinating Committee, so that we are in a position to keep abreast of what is happening.

Incidentally, you may be interested to know that the B.C.G.A. is "servicing" the Central Industrial Bureau, which is the Headquarters of the Industrial Development Centres.

Press Contact Officer.

Before leaving the question of Press advertising, I would like to mention that, on the Association's staff, we have a Press Contact Officer—Mr. K. J. Redwood. His services are available to all members who require them in connection with any functions or activities for which Press notice is desirable. Mr. Redwood, who is an active journalist with friends in most of the newspaper offices in the country, has already done a great deal of good work, and it is hoped that members will make every use of his services.

The next item under advertising is described in our Rules as "circulars and other printed matter." To-day, we usually refer to booklets or leaflets, or if we want to be very impressive, to "brochures." I know that the question of the Association's literature is a highly controversial one, because it is quite clear from the small orders placed by members that there is a missing link somewhere. Before dealing with the matter in detail there is one aspect I want to make quite clear. The Association has been in the habit of adding to the production costs a percentage to cover overheads—*i.e.*, a proportion of the salaries of those of our staff who are responsible for preparing the literature, and other incidental costs. If this were not done, it would cost the Association some £2,000 per annum, which would inevitably affect some other item of expenditure—probably Press advertising. If, therefore, members would remember that by paying a little more than cost price, they are helping the Press advertising account, or some other activity, they would perhaps be more generous with their orders. I think you will all agree that with our present income, it would be impossible for us to give all literature free. Also, please do not forget that if you take one of our leaflets to your local man and ask him for a price, he will be quoting you for printing only, the material having been provided only after careful collection of information which has to be sub-edited and put into proper order.

One of the great difficulties in this matter is to please everyone. Tastes are so varied and local conditions so different that a booklet which one undertaking takes in large quantities is absolutely shunned by others. We are also, you must remember, faced with the free distribution of literature by appliance manufacturers. In my opinion the solution to the problem is to be found in the publication of fewer—and better—booklets which would obtain a universal sale. It is only in this way that we can reduce costs. The "Get Up-to-Date with Gas" booklet produced last spring received universal approval, and the order placed for this publication was the largest ever given by the Association. But it cost us a very large sum of money, which had to be taken from the Press advertising allocation. I do feel that it is only by gaining the confidence of the Industry by the production of increasingly popular literature that we shall be able to get the costs down to a level which will appeal to buyers. If we can get your confidence then we shall get your orders, and the prices will drop as the orders, based on better booklets, rise. Striking instances of this are two issues of "A Thousand-and-One Uses for Gas" issued in July—"Gas—A National Industry" and "Cooking with Perfect Control." Both these publications were to the general taste, and we were able to reduce the price by more than 50%.

"A Thousand-and-One Uses for Gas."

I shall deal with the *Bulletin* later on, but before I leave the question of the Association's literature, I would like to make a few remarks regarding "A Thousand-and-One Uses for Gas." These issues vary, of course, in importance, but, with the increasing use of gas in industry, we do feel that a great deal more use should be made of them. I am hoping, therefore, that members will consider very carefully the question of issuing a copy not only to every member of their staff, but also to those people in their particular district who are interested in the subject with which the publication deals.

The next item relates to exhibitions, demonstrations, and lectures. With regard to exhibitions, the Association has, of course, been largely responsible for the propaganda in connection with the Gas Exhibit at the British Industries Fair, and for the organization of the Joint Gas Conference held there each year. It is greatly regretted that reasons well known—*i.e.*, the impossibility of exhibiting "live" gas appliances in the month of May, and the lack of space worthy of the Gas Industry at the London sections of the Fair—have rendered a Gas Section impossible in 1935. But the matter is well in hand with regard to subsequent years, and every effort will be made to see that nothing is lost by our not being in the British Industries Fair next year. The Association has also helped in many local exhibitions, and we were able recently to combat the electrical propaganda which was identified with the Trade Union Congress in Dorset, where the Tolpuddle Martyrs were commemorated.

In regard to demonstrations, these must, of course, be left to local undertakings, though the Association has helped and is always ready to help on these occasions. As for lectures, we have on our staff Mr. Jennings, late Distribution Superintendent of the Brentford Gas Company, who has given 118 lectures to a total of no less than 14,000 people during the past year, his audiences being schools, rotary clubs, women's institutions, and other bodies. He is doing most valuable work, and it is hoped that two further lecturers will be appointed—one for the Midlands and one for the North, leaving the South and West to Mr. Jennings, whose activities up to now have covered the whole country. The importance of conveying to young and old by these means the tremendous advantages of gas, its efficiency, its flexibility, and its reliability, cannot be too highly estimated.

Another of our objects is to enable those who are engaged in the conduct of gas undertakings "to meet and correspond"—in other words, the organization of conferences. There are many who scoff at conferences as so much waste of time. There is a great deal in what they say, but a new type of conference is now being arranged which will, we hope, provide us with a great deal more publicity than those held in former years. We shall be appealing largely to those in authority—*outside* the Gas Industry—to city councillors, architects, teachers, and all who influence public life, and the personal contact between such people and the gas engineers and managers, with the resulting publicity, cannot but be of inestimable value.

Another meeting ground for those connected with undertakings is our monthly publication, the *Bulletin*. We intend to make this an increasingly live organ which will contain articles of value to all, contributed very often by members themselves. We are sure that, in this way, members will have an excellent opportunity of obtaining information and ideas respecting new methods in the commercial development of the Industry. We should like members to regard the *Bulletin* as their own paper, and to take a real interest in it by letting us have any criticisms and suggestions which they think would improve it.

Commercial Methods.

The next item is described in the Constitution and Rules as "to develop and improve the commercial methods of those engaged in the Industry." This, of course, covers a tremendous field. In our opinion, however, the principal item is the question of staff training. As you know, the Association, a year or two ago, instituted the Domestic Gas Salesmen's Course. This Course has been fairly well taken up throughout the country, but the enrolments have not increased as we would like them to have done. The number of certificates awarded—and it must be remembered that those certificates are universally accepted in the Industry—has been very disappointing, and although the view may be held that examinations do not make a salesman, the study of the lectures in this course is undoubtedly a very fine groundwork which cannot but help to improve the personality of the salesman who takes them. Only last week two prominent engineer-managers said to me, quite separately and on different occasions, that we must not forget that we are shopkeepers, and the Association does hope that undertakings generally will see that all members of their sales staff are encouraged to take the Salesmen's Course.

In addition to the Salesmen's Course, we have recently commenced a Fitters' Course. Considering that courses of this nature are extremely difficult to arrange, we have

had up to date a very encouraging response. A number of large undertakings have enrolled their fitters, and where the Courses have been completed, those concerned have been extremely pleased with the results, as they have given the fitters quite a new outlook, and the discussions which have followed each lecture have been of immense value in bringing out points where there seemed to be some doubt in the fitter's mind as to what was the exact policy of the undertaking. We sincerely hope that you will all consider enrolling your fitters as soon as you possibly can.

I do hope members will give their attention to the prime importance of properly trained sales staff. I am a great believer in personal contact, and, although I appreciate the value of advertising and propaganda, which aims at bringing the public into our showrooms, I do feel that by far the most important work can be done by establishing between the consumer or the potential consumer strong friendly personal relations. You all know that a great deal more can be done by a pleasant chat than by all the correspondence or advertisements or booklets in the world, and I do feel, therefore, that it is up to the Gas Industry to train more and more salesmen and saleswomen, and, through them, get nearer to the hearts of the people. I had a most interesting talk the other day with a distinguished member of the Gas Industry of the United States, who had made an exhaustive tour of this country. He was frank enough to admit that in the matter of production and distribution we could give them points, but when it came to selling, it was quite a different matter. He was appalled at the lack of selling personnel in this country, and he told me that he was sure that the great fight which the American Gas Industry was making in the face of cheap electricity was due to the intense selling organization and the great service rendered to consumers. The importance of close contact with women consumers cannot be over-emphasized, and I shall deal with this point later.

Displays.

Another point which calls for improvement is the commercial methods of the Gas Industry with regard to showroom and window displays. Great strides have been made in some areas in these matters during recent years, but there is still a great deal to be done by many undertakings. As shopkeepers, it is absolutely necessary to present to the public the most attractive showrooms and windows. The Association has been fortunate enough to secure the services of Mr. W. R. Oliver, whose wide experience in this subject is already becoming a powerful influence in the Industry, and I hope it will not be long before I am able to send Mr. Oliver to you to give you the benefit of his knowledge and experience.

As far as office organization is concerned, we have already been very helpful to a number of undertakings, and we are fully equipped and quite prepared to offer advice to any who may require it.

The Association has also, as no doubt many of you know, an extensive Inquiries Department which deals with inquiries not only from members, but also from commercial organizations and from members of the general public. We have recently been of great help to a number of undertakings in connection with street lighting, and we have acquired a tremendous amount of information which has been of the greatest possible value to a number of members who were threatened with the loss of their street lighting contracts. The whole question of the dissemination of information regarding the domestic uses of gas and the latest developments in the Industry is at the moment under discussion, and it is hoped that before long the Association will be able to offer to its members even greater services in this direction than it has done in the past.

You may perhaps think it ungallant of me to leave the ladies to the last, but I would like members to know that we intend to take a far greater interest in the development of propaganda among women's organizations on behalf of gas. Mrs. Murphy, whom many of you have known as Receptionist at Grosvenor Gardens, has been appointed to take charge of a Home Service Section, which will co-ordinate the activities of women in the Gas Industry and will foster additional contacts between gas undertakings and the housewives in their districts.

Mrs. Murphy is at present engaged in obtaining data on the matters which I have mentioned, and before long she will be visiting each district in turn, so that she may see what can be done to help those who have not yet properly tackled this problem. I am quite sure that Mrs. Murphy will receive a warm welcome in South Wales, and that her help and advice will be of the utmost benefit to members.

I think I have now gone over the principal work of the Association, and you will, I think, realize from what I have said, that the great idea behind our future policy will be to develop the personal contact by means of the individual efforts of members of the staff of the Association. We do hope that all members will avail themselves of all the services which the Association can render, and we hope also that you will not fail to let us have your criticisms—constructive, I hope—with regard to our work, and any suggestions which you feel will make that work more valuable to you all.

Discussion.

Mr. J. E. KENSHOLE (Merthyr Tydfil), in opening the discussion, said reference had been made to the desirability of making people gas-minded. He would suggest the possibility of making the Government a little more gas-minded. He referred to a case where the Government were taking over a building which was fitted for lighting and heating by gas. One of the conditions upon which they were taking it over was that it should be wired for electricity. The local gas undertaking received a communication from the Board of Works asking for the usual application form for the supply of gas, with particulars as to meter rents, &c. The gas undertaking replied to the effect that as the building was already fitted for gas no application was needed. A few days later they received instructions to lay a pipe from the meter, 40 ft. or 50 ft. There was no question of efficiency, but afterwards they did not have a look in. He wondered whether the B.C.G.A. could get into touch with Government Departments to prevent what he considered to be a big waste of public money. By doing so the Association would be doing excellent work.

Mr. EVAN REES (Wandsworth) reminded those present that one of the main objects of the B.C.G.A. was to help them, and he suggested that the younger members should interest themselves in the literature supplied by that body. He was inclined to agree with what Mr. Kenshole had said in regard to the attitude of the Government. The Gas Industry was one of the basic industries without which citizens could not live. They could no more live without gas than without soap and water, and if only for that reason the Government of the day should do more than they did to help it. They should do more than they did do to remind the public of the vast ramifications of the Gas Industry. Present-day motoring conditions, for instance, had been vastly improved through the Gas Industry. They should tell the public generally what the Industry had done and could do for them. He hoped that the literature provided would be the means of creating gas-mindedness throughout the country. Possibly some of them did not realize the enormous amount of work that was being done by way of propaganda. But much more might be done. They were up against competition, and very keen competition, too. They were not alarmed over it, but it had to be dealt with, and dealt with effectively. One other point he would like to make was that gas undertakings should take a greater interest in local public affairs, and thus provide themselves with opportunities of telling the right people what the Gas Industry could do.

Mr. B. J. BELL (Cardiff) said that the B.C.G.A. was to-day a vital necessity. One of the points made by Mr. Rowe was that personal contact could be of inestimable value, and most of those present would agree with him. With regard to advertising it was absolutely necessary that they should take the foremost place in the Press of this country. There was no corporate body of manufacturers in any line of business who were not amalgamating for the purpose of entering upon an extensive campaign of publicity. It was only by expensive methods which no single undertaking could contemplate that they could obtain the desired results. National advertising was vitally necessary—but it should be supported by local advertising.

Co-operation Essential.

Mr. W. ROSS TAYLOR, M.P. (National Gas Council), stressed the point that co-operation between all branches of the Industry was essential. The National Gas Council, which he represented, could do very little without the full support of the Gas Industry, and he was glad to be able to say that there was no part of the country where the Council received greater support than in Wales and Monmouthshire. A lead had been give by Wales in the creation of an industrial centre at Cardiff, and the Council were much indebted to Mr. H. D. Madden and those associated with him in that enterprise. Referring to the stand which had been taken in the matter of coal prices, he said it had got to be recognized that gas was an industry of national importance, and that its success was of vital importance to the coal industry. Coal could do a good many things, but there was one thing it could not do in its raw state. It had got to be turned into gas, and that industry ought to give them the favourable consideration that they asked for. With regard to Mr. Kenshole's remarks about gas-mindedness, he thought the present House of Commons was more gas-minded than any previous House of Commons. The passing of the Gas Undertakings Act was a sign of that. They had in that Act many valuable concessions. He was reminded that it had emanated in Newport. With regard to the use of gas in Government buildings, Mr. Rowe would agree with him when he said that an enormous amount of work had been done in the last twelve months in that direction, and he was glad to know from him that it was bearing fruit. He could assure them that the pressure was being maintained. They had obtained certain satisfactory results by negotiations, and he was most hopeful that they would soon find that more consideration was being given to the use of gas.

Mr. H. D. MADDEN (Cardiff), in proposing a vote of thanks

to Mr. Rowe, said he was partly responsible for the paper, inasmuch as it was at his suggestion that Mr. Rowe was asked to come there to tell them something about the aims and objects of the B.C.G.A. In recent years he had been very closely in touch with that body on the Executive, and he knew something about the difficulties and prejudices they had had to put up with. Since Mr. Rowe had been in charge there had been a complete change in the arrangements and personnel, and the work was now being done by specialists, with the result that the efficiency of the B.C.G.A. to-day was greater than ever. It was to the Provinces that they must look for support. There was one outstanding feature, and that was that Mrs. Murphy had been put in charge of a Home Service Section. They would all realize the necessity of having a lady to deal with ladies on the domestic side of the business, and the number of such officers would have to be increased as time went on. He felt sure that in Wales and Monmouthshire they would be only too delighted to have her assistance, and to accept her guidance in all matters affecting domestic economy. After referring to the value of local advertising, Mr. Madden said reference had been made to the importance of personal contact with the consumers. He would emphasize the importance of the gasfitter, who saw more of the consumers than anyone else did. Mr. Rowe had told them that the B.C.G.A. were in close touch with the Technical Sub-Committee of the Joint Co-ordinating Committee. The future of the Gas Industry, said Mr. Madden, lay very much in the hands of that Committee, and very valuable work would be done by that body.

The vote of thanks was formally seconded by Mr. J. F. RUST (Newport).

Mr. ROWE, replying briefly to the discussion, pointed out that the B.C.G.A. worked in very close touch with the National Gas Council. With regard to salesmen he had no doubt at all as to their quality. It was quantity that was wanted.

British Commercial Gas Association

Twenty-Third Annual Report of the General Committee

The Report, which was presented at the Conference of the B.C.G.A. at Sheffield, covers the work done during the past twelve months.

Finance.

The accounts for the financial year ended March 31, 1934, submitted with this report, show that the Association's total subscription income for the twelve months amounted to £68,964 9s. 6d. as against £71,517 17s. 3d. in the previous year. The net decrease of £2,553 7s. 9d. is attributable to the receipt of certain subscriptions after March 31, 1934, which were due for payment before that date. The rate of contribution during the year remained the same as for the previous year.

In the Association's 22nd Annual Report reference was made to the question of increased competition and the need for augmenting the funds at the disposal of the Association for Publicity and Propaganda work. This need has since become a positive necessity with the consequence that the rate of contribution to the National Associations has been increased by 2s. 6d. to 10s. per million c.ft. of gas made, as from April 1, 1934. It will be a matter of great satisfaction to members to know that at the time of this report the increased contribution has been agreed by 65·7 per cent. (reckoned on the basis of annual output of gas) of gas undertakings subscribing on the joint basis and that the full amount of the increase is to be applied to the extension of the Association's work. The General Committee earnestly hope that when the next annual report is made it will be possible to state that every member will be paying the full amount, thus providing requisite funds to enable the Association to engage in publicity and propaganda which will meet current needs and be commensurate with the importance and value of the service offered by the Gas Industry to the public. Experience of the Association's work during the past 23 years offers ample evidence as to the value of money wisely invested in publicity designed to educate the public in the advantages of the use of gas, and it is with the greatest confidence that the Association believes that future benefits will be proportionate to the increased expenditure now contemplated.

On the expenditure side of the accounts it will be noticed that £56,729 0s. 3d. was spent upon publicity as against £62,314 8s. 10d. in the previous year. The decrease of £5,585 is caused by decreased subscription income to which reference has already been made, and the increased expenditure upon Gas Development Centres, retaining fees, and exhibitions.

After bringing into account all items of expenditure incurred during the year a balance of expenditure in excess of income amounting to £563 2s. 5d. is carried forward.

Headquarters Staff.

The Association's work during the last few months of 1933 was greatly handicapped by the absence through illness of both the Executive Chairman and the General Secretary. The former returned in January, but unfortunately was forced out of action again at the end of April. He is now completely recovered, and the Committee are glad to welcome him back. The General Secretary returned to duty in March, and has, the Committee are glad to report, carried on continuously from that date in much improved health.

In January last, on the recommendations of the Establishment and Executive Committees, the Committee appointed Mr. W. D. Rowe as Manager of the Association. Mr. Rowe has had very considerable experience in the Civil Service and in the newspaper world, and his many contacts have proved already of value to the Association.

Further staff re-organization has taken place in the last few months, resulting in a closer co-operation between the various Departments. These changes have reduced the salary list and have enabled the Committee to expend the money so saved in other directions where additional activity is urgently needed.

The Association has also collaborated with the National Gas Council and Institution of Gas Engineers on the Joint Co-ordinating Committee, and has accepted responsibility for the organization and staffing of the Central Information Bureau, which maintains a regular and close contact with the various industrial centres.

First, a very capable Display Officer—Mr. W. R. Oliver—has been appointed. Mr. Oliver has had wide experience in daily display work, and has already made his presence felt in services rendered to members. Mr. Oliver will be visiting each district in turn in order to give members the benefit of his knowledge of window and showroom display and their relation to sales promotion.

Mrs. Eileen Murphy (previously Receptionist) has been put in charge of a Home Service Section of the Association and will be able to advise members in regard to increased contacts with the women in their areas. Mrs. Murphy will also visit the districts in turn.

One of our lecturers, Mr. G. L. Jennings, has been placed in charge of all work connected with the educational world. Mr. Jennings will continue his lectures but will also be responsible for all matters connected with the educational authorities. Further details of Mr. Jennings' work appear in a later section of the report.

Mr. Peter Batten has resigned his appointment as Press Contact Officer in order to take up an important newspaper appointment in Australia. In his place, Mr. K. J. Redwood has been appointed on probation.

The staff as a whole have carried out with energy and zeal the many additional duties which have resulted from the increased activities of the Association, and the Committee are confident that, as now organized, the smooth working of the internal organization will enable the Association to give even greater help to its members.

Press Publicity: National and District.

As in former years, two main advertising campaigns were conducted in the National and District Press. The use of large spaces and modern layouts considerably increased the effectiveness of these campaigns, and a large volume of inquiries was received.

The first campaign—in the autumn of last year—embodied "Mr. Therm" as the leading figure in a number of "strip" advertisements in which the slogan "Not a Cold Corner in the House—Thanks to Gas" advertised fires and radiators. An illustrated booklet with the same title was supplied to members and the general public. The publicity value of "Mr. Therm" as a personification of the optimism and cheerful spirit of service of the Gas Industry is well established and this symbolic figure can now be said to have taken a place beside the famous advertising figures of this century. In view of the short time that "Mr. Therm" has been in existence this is a remarkable achievement. The anxiety of our competitors to find a counterpart for their own propaganda is significant.

In the second campaign which occupied the early part

of this year, the Association enlisted the services of a number of well-known people whose portraits and "testimonials" backed up the slogan "Get-up-to-Date with Gas." The illustrated booklet used in connection with this campaign was issued free to members who showed their appreciation of this departure from the general rule. The circulation of this booklet was the largest in the history of the Association. In addition to these main campaigns special advertisements have appeared regularly in the technical, professional, and trade journals.

The Association, in co-operation with the Gas Light and Coke Company, displayed a large poster on the London Pavilion site in Piccadilly Circus during a part of the summer.

As an instance of the light in which the B.C.G.A. National Advertising is regarded by our competitors we may quote from one of the coal industry's journals:

> "We consider the (gas) propaganda is immaculate in design and 100% in appeal to the average fuel consumers."

Press Contact.

The number of favourable references to gas in the Domestic and Technical Press during the year as well as in the large national and district newspapers, has been very satisfactory, and journalists continue to make good use of the Association's photographs and information files. A considerable number of "news pars," with or without photographs, have appeared in connection with various developments and extensions in the applications of gas, and the Committee is hopeful that members will continue to co-operate in this direction by sending the Association material in good time, where any local development justifies it.

The Gas Industries Section at the British Industries Fair, the B.C.G.A. district conferences, and other special events in connection with the Gas Industry, received a very large amount of publicity, while nearly 200 newspapers and journals contained reports—many of them of considerable length—on last year's Conference at Bournemouth.

Exhibitions.

British Industries Fair, Birmingham.—The Gas Industries Section was organized on an extensive scale again this year by the Joint Committee upon which the Association was represented and constituted an important feature of the Fair.

The Gas Industry Information Bureau organized jointly by the Association and members of the Heavy Section of the Society of British Gas Industries proved a centre of attraction and a valuable means of establishing personal contact with members.

His Royal Highness the Prince of Wales visited the Bureau during his tour of the Fair and signed the Visitors' Book.

The Joint Industrial Exhibit occupied a much greater space in this year's Fair and contained many important features which aroused considerable interest and a particularly large number of valuable inquiries were made by industrialists. The Exhibit was again organized and staffed by the Gas Light and Coke Company and the Birmingham, Newcastle-on-Tyne, and Sheffield Undertakings.

The Association also co-operated with the other National Organizations in organizing the Joint Gas Conference which was held during the British Industries Fair at Birmingham. There was an excellent attendance at the various Sessions, and in response to a general request the address and paper, which were read by Sir Francis Goodenough and Dr. E. W. Smith respectively, were reprinted under one cover for the use of the Industry.

It is satisfactory to record that the Association was able to secure an increased amount of editorial Press publicity.

The Building Centre.—The exhibit at the Building Centre which has been organized by the Association in co-operation with the Gas Light and Coke Company and the Society of British Gas Industries continues to create a considerable amount of interest among architects and others interested in the building trade, and many useful inquiries continue to be taken. The Gas Light and Coke Company have recently carried out the entire reorganization of this exhibit.

Local Publicity.

There is increasing evidence of an extension of local advertising by member-undertakings. The use by members of the Association's service of preparing advertisements for local use has increased by 50%. Members are also generally taking larger spaces locally for Press advertising. Several whole page spaces have been designed for use in connection with the centenaries of undertakings, special occasions, &c.

The requests for service have frequently been of a rush nature to combat competitive statements or propaganda. It is pleasant to record that on such occasions without exception the Association has been thanked for its promptitude and the standard of the work done.

The last volume of advertisements for local use has been so popular that it has necessitated the immediate preparation of a new volume. This will be issued shortly.

A number of leaflets, booklets, and folders have been produced. The Association is applying the most modern methods of production to this side of its propaganda work, and its efforts have resulted in a definite increase in orders. A children's rhyme and painting book was widely reviewed in the Press.

Local Occasions.

Members have called for the Association's assistance in connection with occasions of special significance and valuable publicity of a national, as well as a local, character has been obtained. These have included the floodlighting of Exeter Cathedral on its 800th anniversary; the opening of a filling-station for gas-driven vehicles at Chesterfield; the inauguration of new carbonizing plant at Tottenham by the Duke of York; the opening of new works at St. Ives (Cornwall) by Mr. Walter Runciman, M.P.; and a number of centenary celebrations.

B.C.G.A. Conferences have been held at Dunfermline, Lincoln, Leicester, and Harrogate. On each occasion considerable space was given by the Press to reports of the proceedings. An innovation at the conferences was the afternoon session for women, at which a short address on domestic problems was given. This was in each case very well attended, and the audiences were obviously interested.

Printed Propaganda.

The popularity of *A Thousand and One Uses for Gas* continues to increase, and a greater number of copies are being distributed monthly. In this connection it may be mentioned that a recent issue entitled "Gas: A National Industry," created widespread interest, and a record number of copies were taken by members for general distribution, which should have had a considerable influence in educating public opinion regarding the national importance of the Industry.

The policy of issuing from time to time authoritative articles on the industrial uses for gas has been continued with good results. Another subject of importance to the Industry is that of slum clearance and housing. Several issues have been planned to cover this subject, the first of which—"Gas in Housing and Slum Clearance"—was produced in the year under review. Other subjects dealt with included the manufacture of ice-cream, cooking (large-scale and domestic), greenhouse heating, and the equipment of photographic establishments. All issues received excellent Press notices.

Christmas Fare.—This publication has now become established as a regular annual feature of the Association's publicity literature, and the demand continues to increase. Many inquiries are received direct from the public as a result of the editorial references in the Press.

The Flambeau.—Every endeavour has been made to effect progressive improvements in the issues of this magazine, and the introduction of articles by well-known writers and others whose names are familiar to the public has increased its attractiveness. There is a cumulative improvement in the demand from members for each quarterly issue.

In view, however, of the widespread use that our competitors are making of propaganda of this type, the Committee looks to a more general support of *The Flambeau* by members. An increased demand for the magazine would enable the Association to carry out various contemplated improvements in its format and contents, thus adding to its value without increasing its cost.

Lectures.

The services of the Association's lecturers continue to be in demand, and during the past year addresses have been given to one hundred schools, in addition to a number of rotary clubs, women's institutes, and other associations. A total of 118 lectures to 14,000 people has been given by one lecturer alone, which represents a 75% increase over the figures for last year.

A considerable number of engagements have already been booked for next year.

Education Scheme for Gas Salesmen.

During the past twelve months, 246 students enrolled for the Domestic Gas Salesmanship Course, bringing the total number of enrolments to date to 2,012. Many of the students who enrolled during the year did so upon their own initiative with the object of voluntarily improving their educational qualifications for advancement as gas salesmen. This evidence of the need felt by employees of gas undertakings for training in the art of salesmanship as specifically

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applied to the Gas Industry renders it important that the Domestic Gas Salesmanship Course shall always remain an essential part of the Education Scheme.

Although interest in the Salesmanship Course has been maintained it is felt that there are still many gas sales representatives who could with much advantage to themselves and their undertakings, participate in the training, and members are urged to facilitate as far as possible the entry of their staffs for the various courses of instruction. Adequate staff training means better service and satisfaction to the consumer, and ensures also that full advantage is taken of every opportunity for new business.

The production of text books, in the publication of which the Association has collaborated, covering the whole field of technical training required by the standard of the Institution of Gas Engineers' examinations, and also the field of information covering the economics of gas supply, will shortly be available, and it is certain that these books will be of considerable value in raising the standard of educational proficiency throughout the Gas Industry.

While the Domestic Gas Salesmanship Course provides the training necessary for gas salesmen, there are many employees such as fitters, maintenance men, &c., who are in constant contact with consumers, and for that reason would benefit by instruction in certain elements of salesmanship, but for whom the full course is not suitable. A lecture course was therefore instituted last year for those grades of employees and 715 trainees were enrolled.

The results accruing to those undertakings who entered their staffs for the lecture course are most satisfactory; but it is hoped that in the light of the experience gained during the first sessions it will be possible considerably to improve the training and the terms upon which it will be available in the future.

Personal.

The following have been added to the list of Vice-Presidents during the past year:

Alderman George Billington, J.P., Chairman, Light, Heat, and Power Committee, Salford.
Alderman W. Chapman, Chairman, Manchester Corporation Gas Department.
Councillor R. R. Fielding, Chairman, Blackburn Gas Department.
Councillor R. H. Hume, Chairman, Birmingham Gas Department.
Councillor W. Muter, Convener, Edinburgh Corporation Gas Department.
Alderman R. Tortington, Chairman, City of Leeds Gas Department.
Alderman F. Tweedale, J.P., Chairman, Oldham Gas Department.

The Committee records with deep regret the loss of a good friend and valued colleague in the death of Mr. J. W. Auchterlonie, Engineer and Manager of Cambridge University and Town Gas Light Company. Mr. Auchterlonie represented the Eastern District on the Executive Committee for many years, and his loss will be keenly felt.

The Committee has the pleasure to report that Councillor Walter Muter, Convener of the Edinburgh Corporation Gas Committee, has consented to be nominated for election as President for 1934-35.

[Alterations to the Constitution and Rules of the Association, approved by the General Committee at their meeting held on July 18, 1934, and recommended for adoption by the members at the Annual General Meeting, form an Appendix to the above Report.]

Association of Public Lighting Engineers

Annual Conference in Aberdeen

The 11th Annual Meeting and Conference of the Association of Public Lighting Engineers was held in Aberdeen from Sept. 17 to 20. There was a large attendance of members, delegates, and ladies numbering more than 250, and among those attending were Dr. H. F. Gillbe, of the Ministry of Transport (Secretary of the Departmental Committee on Street Lighting). In connection with the Conference, a number of experimental street lighting installations had been erected in various streets in Aberdeen using either gas or electricity (details of which are given in the Presidential Address), and there was also an indoor exhibition of street lighting appliances in the Music Hall buildings where the Conference was held. The British Commercial Gas Association, the Institution of Gas Engineers, and the Gas Light and Coke Company were among the organizations officially represented.

On Monday evening, Sept. 17, there was a reception by Lord Provost Alexander and the Lady Provost in the Art Gallery.

Mr. E. M. Severn, the retiring President, was in the Chair at the opening of the Conference in the Music Hall Buildings, on Tuesday, Sept. 18, when an official welcome was given to the Association on behalf of the Lord Provost and Council of Aberdeen by Councillor A. Reid.

The President expressed the thanks of the Association to Councillor Reid for his cordial welcome, and after expressing appreciation of the hospitality that was being accorded to the Association by the Aberdeen Council, formally inducted into the Presidential Chair Mr. Alexander Forbes, Inspector of Lighting, Aberdeen, who then delivered his Presidential Address.

PRESIDENTIAL ADDRESS

By Alexander Forbes (Inspector of Lighting, Aberdeen).

The excellent Exhibition which has been assembled for the information of members and delegates should in itself serve as a valuable record of technical progress.

A tendency, well illustrated, is the use of "directional" reflectors intended primarily to improve the mid-span illumination, but also, in the wider sense in which Lt.-Com. Haydn T. Harrison has used the term, to increase illumination at any other special points. The problem how far to use these directional methods, and how far to utilize general diffused lighting, is one with which public lighting engineers are continually preoccupied. It is sometimes forgotten that other considerations besides the needs of motor traffic—important as they are—apply to the main thoroughfares of important cities, and that, even on arterial roads, "appearance" can rarely be ignored. It is for this reason that one learns with interest, tempered by some degree of scepticism, of efforts abroad to solve the problem by the aid of fixed headlights, mounted below eye-level, and trained in the direction of the traffic, thus giving conditions free from glare, but open to possible objection in other respects.

Effect of Surroundings.

Glare is another problem that is always with us. Its definition presents considerable difficulties, as the framers of the British Standard Specification have found. One point I would like to emphasize—the very important part played by surroundings. A lighting unit that appears decidedly glaring on a dark country road may lose its offensiveness when there is a light-coloured building as its background, and may appear to exhibit merely a mild sparkle when seen in the vicinity of illuminated signs and brightly-lighted show-windows.

Surroundings, while unfortunately not under the control of the public lighting engineer, may have a vast influence upon the results of his work. The value of light-coloured buildings in facilitating diffusion of light, diminishing contrast, and softening shadow, has already been mentioned. I think you will agree that Aberdeen is fortunate in its clean grey streets. The buildings are practically all constructed of the native Rubislaw or Kemnay granite, which assists our street lighting to a marked degree.

The influence on public lighting of the road surface is of even greater importance. The dark polished surfaces now usual in cities give little aid to the lighting engineer, and have, indeed, caused him to reconsider his technique, relying more on the reflected image of the light sources than the actual illumination of the roadway. The hard granite setts in our streets have an advantage in this respect. Their chief drawback, the noise made by rattling iron-ringed wheels, has been the subject of complaint in the past, but becomes continually less as the use of pneumatic tyres on all forms of vehicles increases.

The Road Traffic Bill.

Before concluding this initial survey I may refer to several recent events of outstanding importance to the public lighting engineer. The Road Traffic Bill, defining a built-up area as one in which a system of street-lighting is maintained out of the rates and imposing a speed limit in such areas, has been the subject of much comment. Efforts have been made to convey to the authorities the views of those interested in lighting, and the modifications of the

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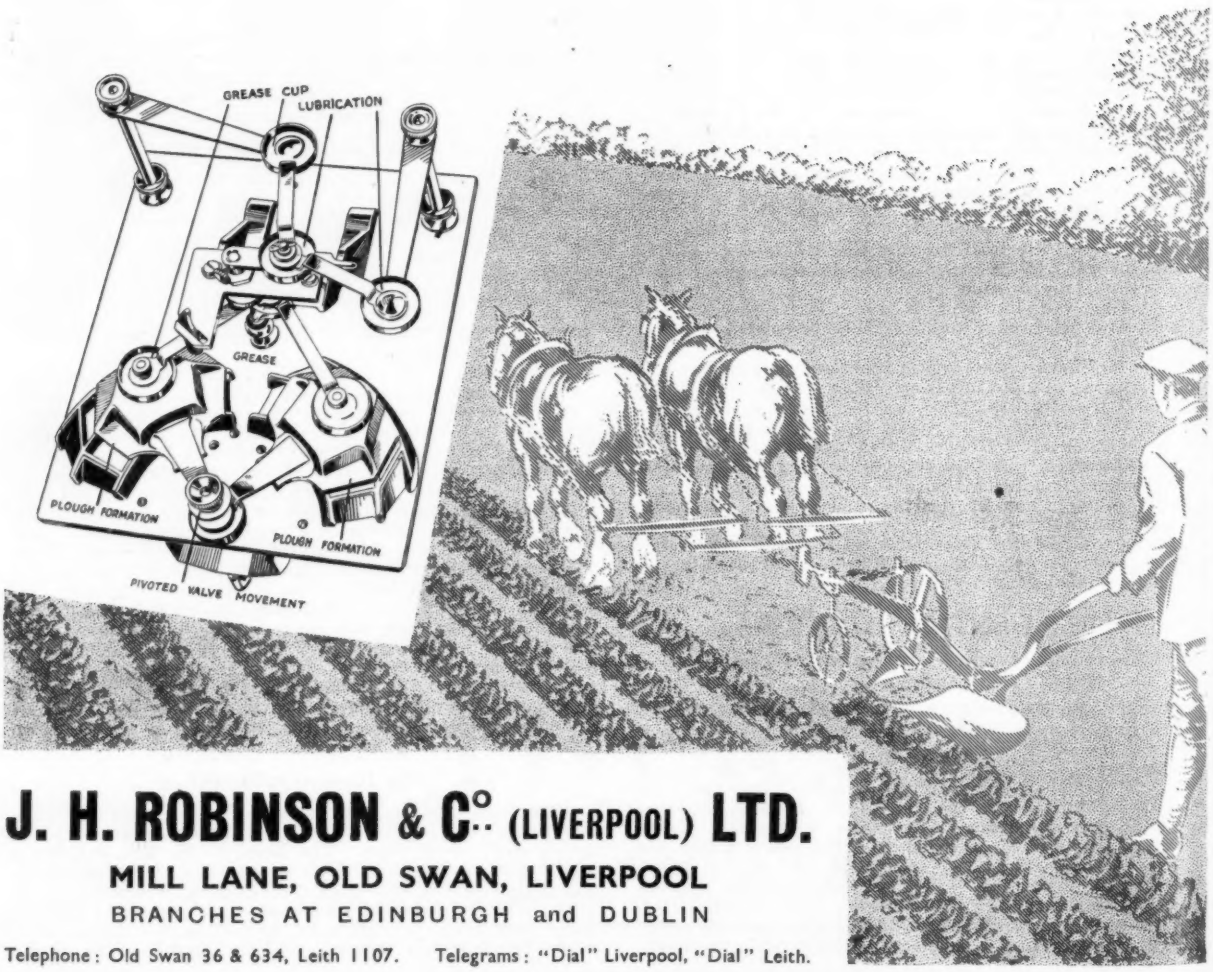

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Bill since adopted go far towards mitigating the objections originally felt. Reflection seems to have led to the conclusion that the Bill is not likely to act prejudicially to the development of public lighting, even though in principle the association of a speed limit with the existence of public lighting seems illogical, and the administration of the Act may present difficulties.

We must, however, appreciate the seriousness of the position as revealed by the Ministry of Transport Report on Fatal Road Accidents in Great Britain for 1933—a total of 7,202 killed and 216,328 injured. Consideration of these figures should incline one to whatever sacrifice is involved in diminished speeds. For after all, the speed is the fundamental cause of hazard; such excuses as claims of drivers that they were " puzzled by street lamps " or " dazzled by motor-car lights " surely do not exonerate them from blame for attempting to maintain speed in such circumstances.

Nevertheless, it is, of course, our bounden duty to do everything possible to eliminate such defects, which are in fact often occasioned by the extreme economy with which public lighting is administered. It is exceedingly difficult to obtain accurate statistics illustrating the practical benefits of good public lighting, but such analysis as has been attempted seems to lead to two conclusions: (1) The proportion of accidents occurring by night has tended to increase steadily during recent years (a natural result of the increasing use to which roads are put during hours of darkness), and (2) taking all the relevant circumstances into account, it is evident that the security of traffic during darkness must be very much less than in full daylight.

The continual growth in the speed and volume of motor traffic obviously demands much better street lighting than in the past. Yet, in fact, public lighting engineers are expected to avoid any increase in their estimate, and it is thus only by using their professional skill and by taking advantage of the more efficient lamps and appliances introduced by manufacturers that improvements in lighting conditions can be made. If local authorities would agree to grant an increase of, say, 50% on the year's estimate on electric current and consumption of gas, what a valuable increase in the illumination of our streets—an advance which would undoubtedly benefit the city in a business sense—could be made!

Departmental Committee on Public Lighting.

The second event to which reference should be made is the appointment by the Ministry of Transport of a Departmental Committee " to examine and report what steps could be taken for securing more efficient and uniform street-lighting, with particular reference to the convenience and safety of traffic." The appointment of this Committee is an indication of a recognition by the Ministry of the importance of public lighting in relation to traffic. The wide terms of reference should enable it to survey the whole position fully and to take advantage of all suggestions that may be offered by this Association and others, for the advancement of public lighting.

Public Lighting in Aberdeen.

Let me now pass on to the second object of this address, namely, to describe some of the chief features of our lighting in Aberdeen.

I should explain, in the first place, that both our Gas and Electricity Departments are owned by the Corporation. Accordingly when lighting schemes have to be reported on, it is somewhat difficult to decide what illuminant should be adopted, as the present rates of gas—2s. per 1,000 c.ft. up to 43,000,000, and all over this amount 1s. 3d. per 1,000 c.ft., and for electric current—2d. per unit for the first 230,000, 1d. per unit for the next 270,000, and ½d. for all consumption over 500,000 units—are fairly keen, and work out pretty much on a par for price per candle-power and maintenance. Generally the argument settles itself by giving each Department equal shares of lighting. Our total consumption of gas for the year 1933-34 was 52,896,700 c.ft., and for electricity 598,575 units.

Bus routes have been engaging our attention during past years, and five-light No. 2 mantle high-power low-pressure gas lamps, fitted with untarnishable steel directional reflectors, have been installed, and in the narrower roadways are giving excellent results. We have just completed a main bus route over a mile in length, with similar lighting, each lantern being equipped with an automatic clockwork controller, and, as an experiment, we adopted a gas " Reservoir " steel pole with cast-iron base to improve the appearance of the pillar. By this method, no M.I. gas pipe is required. The average spacing is 114 ft., and the amounting height 15 ft. 9 in. Tests revealed a maximum of 2·00 foot-candles, and a value of 0·075 foot-candle for mid-span readings.

Automatic controllers for gas lighting have been installed in our outlying housing districts, and are giving good results, two full rounds being lighted by this method.

Automatic Control.

Regarding automatic control, I am satisfied that this system of lighting can be carried out at less cost than by hand torch lighting, but, at the same time, I hold strong views that more efficient results are obtained by the latter system, as the man has to visit the lamp twice a day, and if the mantles are not giving maximum results at either " lighting " or " extinguishing " time, then it is up to him to make good the defect right away. In automatic lighting the attendant merely has a glance along the streets to see if all his lamps are burning, but he cannot pick out lamps which require adjustment. It is sufficient for him to know that the lamps are all alight.

For many years our Department has used no hard gas mantles, as I have proved that the soft silk mantles, if properly used, give better results than the former, and certainly are much cheaper. We take mantle averages (Septemper to April) and this works out, over a seven-month period, at 2·063 mantles per nozzle. The secret of this low consumption lies in the " burning off " of the mantle. This must not be done when the men are attending to their round in the forenoon, but left until " lighting up " time, when the mantle is " burned off," allowed to cool, then relit, when the mantle takes its proper shape and left burning until " extinguishing " time. The fabric of the mantle has then been allowed sufficient time to " harden off " and will continue to function for months, even years. These mantles assume the same shape as does the inner cone of the Bunsen flame of the burner, and better results are obtained due to this fact.

The spacing distance of all our lamps averages 36 yards.

Maintenance.

All gas lamps or lanterns are cleaned every week. This is a most important point, as clean glass and reflectors count for much better illumination, and dirty glass should not be tolerated in any circumstances. All our lamp pillars and lanterns are painted every second year during the summer months by our own men, thus keeping our equipment in good order and appearance. We are indebted to the Police Authorities for reporting failures in lighting, and also damages to lamps, to certain men in our Department at their home address, after ordinary working hours; and as these men have cycles, reports are attended to at once.

For " lighting up " and " extinguishing " of lamps our men proceed direct from their own homes, and I contend that this system is efficient, as there is little object in men having to meet at certain depôts to receive instructions as to " when to proceed," &c. Our men meet at workshops every Monday morning for instructions, and an average time is given out for the week for " lighting " and " extinguishing." It is left to the men to commence according to the nature of the night and morning, and correct returns are entered on time-sheets. I am fully conscious that this idea would not work out in large cities, such as London, Glasgow, &c., but this system, I am confident, should be applied to all undertakings of the size of Aberdeen, as one gets a squad of men who can be thoroughly depended on to carry out the tasks allotted to them, keeping in mind that they never know when the supervisor may be on their heels. In my twenty-one years' experience, once only has a man failed to turn out at lighting time.

High-power low-pressure gas lamps with pear-shaped globes instead of the square lanterns, are a great improvement as regards illumination, as no shadows are cast from this class of fitting.

During the month of August, estimates are brought before our Committee for the year's lighting. As is customary with other lighting engineers, one has to press for as large a sum as possible to improve city lighting, but in these days of financial stress it is difficult to obtain what one would desire. For the season, 1933-34, our lighting estimate was fixed at £21,235, which represents a sum of barely 2s. 6½d. per head per annum, or fully ½d. per head per week; or, put another way, is equal to a rate of 3·62d. in the £, and although the £21,000 looks a large sum, it must be admitted a very moderate sum indeed, when each individual in our city has only to pay 2s. 6½d. for a whole year's lighting.

I have already emphasized the vital importance of good public lighting in these days of rapid and dense motor traffic, and have pointed out that greater generosity in this direction would often prove a good investment and would be justified by business considerations, besides humanitarian ones. The influence of improved public lighting in attracting visitors and stimulating business has, I believe, been proved by experiments conducted abroad.

In the meantime we, as public lighting engineers, have necessarily to adopt " efficiency with economy " as our motto. If economy must be exercised it becomes all the

more incumbent upon us to keep ourselves informed of the latest advances and to be vigilant in studying their application, so that such funds as are allotted may be expended to the best possible advantage, and so that, not only the important streets of our towns and cities, but also the poorer districts may receive lighting that is at least moderately adequate.

Before closing this address, therefore, I would take the opportunity of expressing the Association's thanks to the many firms who have so obligingly exhibited their goods at the indoor exhibition, and for the excellent collection of electric lighting units (both of the discharge and filament types) and also the splendid display of high-power low-pressure gas lamps fitted up on steel and concrete pillars, which have been erected in our principal streets to show, not only our own members and delegates, but also the public of Aberdeen, the very latest types of street-lighting apparatus.

In this connection, I thank both the local Gas and Electricity Departments and my staff for the excellent service they have given me at this time.

APPENDIX.

EXTRACTS FROM A SUMMARY OF OUTDOOR LIGHTING EXHIBITS (*Based on information furnished by the manufacturers of the lamps and lighting equipment exhibited*).

X = Total breadth of street, including pavements.
Y = Total spacing of lamps—measured up centre of street.
Z = Average mounting height to light source.

GALLOWGATE TO COLLEGE BOUNDS.

The lighting of this 'bus route was improved two years ago by the introduction of 64 Sugg "Rochester" suspension 5-light No. 2 mantle high-power low-pressure lanterns, fitted with pear-shaped globes and directional reflectors. The thoroughfare—being very narrow throughout its entire length—has benefited greatly by this scheme of lighting.

(X = 30 to 33 ft. Y = 105 ft. Z = 14 ft. 9 in.)

UNION GROVE.

Parkinson & Co.—"1,700" Series 10-light suspension lamps, No. 2 mantles (similar to those exhibited at Castle Bromwich last February).

(X = 52 ft. Y = 105 ft. Z = 20 ft.)

The Bromford Tube Company, Ltd., supplied the four steel poles on which the above lamps are mounted. These poles have a seamless steel fluted and stepped shaft, the necessary gear being mounted in the cast-iron base.

W. Sugg & Co., Ltd.—Four 10-light No. 2 size copper "Rochester" suspension lamps, complete with Horstmann clock controller and constant pressure governor, with flat shade and "S" type directional wings.

(X = 52 ft. Y = 105 ft. Z = 20 ft.)

Stewarts & Lloyds, Ltd., supplied the four steel poles on which the above lamps are mounted. These tubular steel reservoir gas-lighting poles have no internal piping or connections, the poles themselves conveying the gas from the service connections to the lamps.

W. Sugg & Co., Ltd.—Two seven-light No. 2 size upright fixing "Rochester" lamps (in ten-light size casing), fitted with Horstmann clock controller, and with constant pressure governor. Also supplied two "Arterial" concrete columns, 14 ft. 6 in. out of ground, and two "Boulevard" concrete columns, 14 ft. 6 in. out of ground.

W. Parkinson & Co., Ltd.—Two "1,900" Series seven-light "U" fixing lamps. Each lamp is supplied with one gas and air adjuster, operated from outside, heat-resisting clear glass bowls, &c., and fitted with the "Kingsland" clock controller.

(X = 52 ft. Y = 105 ft. Z = 16 ft. 9 in.)

ALBYN GROVE.

Falk, Stadelmann & Co., Ltd.—Four "Warrington" five-light suspension lamps, with superheater, for No. 2 mantles, giving a light of approximately 500 c.p., with a consumption of approximately 14 c.ft. per hour. They are constructed with a copper casing and vitreous enamelled steel reflector. The injector is removable *en bloc* by releasing a simple locking device. The lamps are fitted with "Gunfire" controllers.

(X = 52 ft. Y = 90 ft. Z = 14 ft. and 17 ft.)

For this installation the *Stanton Ironworks Company, Ltd.*, supplied four octagonal reinforced concrete lamp standards, having hollow interiors and made by special centrifugal process which ensures great density and resistance to wear. Two sizes, respectively 11 ft. and 14 ft. high (the latter with ladder arms) are shown.

Obtainable in 9 ft. sizes and in various colours.

CHAPEL STREET.

The Gas Light and Coke Company have supplied six eight-light No. 2 mantle low-pressure gas lamps of entirely new design, employing glassware specially developed to bring about the desired light distribution, by *Holophane, Ltd.* The lamps are marketed by *W. Edgar & Son, Ltd., W. Parkinson & Co.*, and *W. Sugg & Co., Ltd.* Each unit in this installation is mounted 24 ft. above the carriageway, and overhangs the latter by 8 ft. The gas consumption is 16 c.ft./hr. (500 B.Th.U. gas). Lighting and extinguishing are effected by clockwork controllers by the *Gas Meter Company, Ltd.* The weldless fluted steel columns are supplied by the *British Mannesmann Tube Company*, and have a cast-iron base with opening door 14 in. by 6 in., with turnbuckle locking device. The raising and lowering gear is by *James Keith & Blackman Co., Ltd.*

(X = 41 ft. Y = 121 ft. Z = 24 ft.)

WOOLMANHILL TO BERRYDEN ROAD.

Foster & Pullen, Ltd.—The improved lighting of this 'bus-route has just been completed by means of fifty No. 520 high-power low-pressure five-light No. 2 mantle lamps, each fitted with "Gunfire" type "D" controller in No. 4 round cast-iron box and stainless steel reflector.

Stewarts & Lloyds, Ltd., supplied the latest type of tubular steel poles.

(X = 35 ft. to 50 ft. Y = 100 ft. to 117 ft. Z = 16 ft.)

FLOODLIGHTING.

ALBYN PLACE—QUEEN'S CROSS CHURCH.

This very satisfactory floodlighting effect has been produced by means of *Foster & Pullen, Ltd.*, gas reflector lanterns, each unit taking twelve mantles and furnishing approximately 4,500 c.p. The reflectors are within wide limits and the lanterns are made either for horizontal projection or with upward beams, with a variety of fixings, so that they may be used either on the ground, attached to the building front, or mounted on parapets, verandahs, canopies, &c.

At the conclusion of his Address, the PRESIDENT invited all those attending the Conference to make a tour of the streets of Aberdeen where the experimental lighting installations had been arranged. He said that the manufacturers had gone to a great deal of trouble and expense in arranging both the outdoor installations and also the indoor exhibits, and that it was due to them that all those attending the Conference should carefully inspect the exhibits.

The Indoor Exhibition.

Mr. J. S. Dow (Hon. Secretary) then gave a brief review of the outstanding features of the indoor exhibition. He pointed out that the last exhibition was held two years ago at Blackpool, when Councillor Minshall—who had unfortunately since passed away—had referred to the fact that there were some 12 towns which spent between them something like £1,000,000 per annum in changes in public lighting. That, said Mr. Dow, emphasized the extraordinary value of such an exhibition as had been arranged this year, because it enabled public lighting engineers and delegates from all parts of the country to see the changes that were coming forward and keep themselves up-to-date, and thus be enabled to use their money in the wisest possible manner—which was the real means of economy.

During the past two years there had been a number of changes. There had also been general problems in street lighting which had been considered, such as the illumination of shiny road surfaces. The distribution of brightness on such roads might be something very different from the polar curves and foot-candles which were worked out in the laboratory. The brightness at angles slightly below the horizontal might have a great bearing on the success of the installation in such cases. There were both gas and electrical equipments to be seen in the exhibition, and there were many devices illustrating the control and distribution of lighting. Steady progress had been made in the design of gas mantles and burners, and the exhibits illustrated the continually increasing tendency to make use of directive equipment. Not only were mirrors being used, but prismatic glass was being adopted in a manner which a few years ago was scarcely contemplated with gas lighting.

Removing Paint from Lamp Posts.

Mr. C. WORSWICK (Assistant Lighting Superintendent, Oldham) described an apparatus which had been devised there for removing paint from lamp-posts which have been repeatedly painted year after year without the previous coats having been removed. The process consists in arranging a furnace around the post, with silicate of cotton held in wire netting as the heating agent. The paint is then heated for six minutes, after which the post is scraped. There is then heating for a further six minutes, after which it has been found that any residue left behind by the scrapers is carbonized and brushes off easily with a wire brush. It was mentioned that the process had been protected, but it was intimated at the same time that any lighting engineer faced with this trouble and wishing to adopt the process could be assured of generous treatment. The cost of materials for treating one pillar was said to be 1s. 6d.

The remainder of the afternoon was spent in an inspection of the indoor exhibition.

Among those taking part in the indoor exhibits were the following: The Automatic Light Controlling Company, British Thomson-Houston Company, Ltd., Edison Swan Electric Company, Ltd., Engineering and Lighting Equip-

ment Company, Ltd., Falk, Stadelmann & Co., Ltd., Foster & Pullen, Ltd., the General Electric Company, Ltd., Gowshall, Ltd., Holophane, Ltd., the Horstmann Gear Company, Ltd., Lighting Trades, Ltd., W. Parkinson & Co., Ltd., Radiovisor Parent, Ltd., Revo Electric, Ltd., Siemens Electric Lamps and Supplies, Ltd., Simplex Electric Company, Ltd., William Sugg & Co., Ltd., and Venner Time Switches, Ltd.

Annual Business Meeting.

The Annual Business Meeting of the Association was held on Wednesday morning, Sept. 19, the President again being in the Chair.

The Annual Report of the Council for the year 1933-34 was formally presented and adopted. This reviewed the activities of the Association during the past year and recorded the fact that Mr. A. M. Bell (Public Lighting Superintendent of the Tottenham and District Gas Company). has been elected Vice-President for the coming year, which means that Mr. Bell will assume office as President at next year's Conference, which, as was announced later in the morning, it has been decided to hold in London.

The following were elected to the Executive Council:

Messrs. J. F. Colquhoun (Sheffield); H. V. Emptage (Margate); J. Sellars (Manchester); and H. W. Gregory (Wembley).

A cordial vote of thanks was passed to the Lord Provost, Magistrates, and Town Council of Aberdeen and to the Gas and Electricity Committees for their hospitality during the Conference, and another to the Hon. Secretary (Mr. Dow) and his assistant (Miss Wright) for the work they had done in organizing the Conference.

Papers.

In the course of the Conference the following papers were presented, and in some cases discussed:

"Lighting Department Practice and Equipment," by Mr. J. M. Ward and Mr. J. Mann.

"The Evolution of the Sinusoidal Diagram and Horizontal Illumination Charts," by Mr. W. J. G. Davey, B.Sc.

"Some New Forms of Street Lighting Fittings," by Dr. S. English, F.I.C., F.Inst.P.

"Some Notes on Traffic Control Signals," by Mr. C. H. Woodward, A.M.I.E.E.

"A New Lighting-Up Time Table Based on Illumination Requirements," by Mr. G. H. Wilson, B.Sc. (Eng.), A.M.I.E.E.

"Road Surface Reflection Characteristics and Their Influence on Street Lighting Practice," by Mr. J. M. Waldram, B.Sc., A.C.G.I., F.Inst.P.

Further reference will be made to these in later issues of the "JOURNAL."

Notes on Plant and Processes

"C.C." Fire Displays.

The accompanying photograph illustrates one of several window displays which Messrs. J. Brockhouse & Co., Ltd., of Victoria Works, West Bromwich, have had specially made for loan to the sales departments of gas undertakings who stock their well-known "C.C." fire.

These displays are very attractively designed and produced in colours, and cannot fail to rivet the attention of all interested in the latest domestic heating appliances.

A New Season's Fire Catalogue.

As usual, the new season's gas fire catalogue, just issued by Messrs. R. & A. Main, Ltd., of Gothic Works, Falkirk, is a very well produced and attractive publication, covering all the latest Main appliances.

Its pages are worthy of close study, as they illustrate and describe a wide selection of framed, inset, and portable fires, complete mantel suites, panel heaters, and radiators, designed and manufactured to provide efficient and economical heating, and obtainable in a variety of finishes.

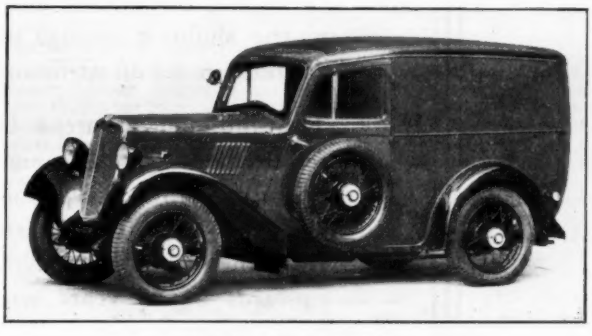
Special attention is directed to the superior qualities of the new "Duramain" radiants described in the catalogue. These radiants are claimed to ensure long service and reduced maintenance. "Duramain" radiants are at present supplied with the "Gloria," "Crichton," and portable "Mainscreen" fires.

The range of finishes available on various Main models is illustrated in the catalogue in actual colours, providing a wide selection for those in quest of harmony in their schemes of decoration.

New Light Morris Commercial Vans.

Even before the 1935 models were announced, the Morris 5-cwt. van was used by nearly twenty thousand tradesmen. Now that it has the large body space of 50 c.ft., with an additional 8 c.ft. beside the driver, it is capable of dealing with practically any daily round.

It is attractively finished to a choice of four colours, is complete with all equipment, has two wide doors to the driver's compartment, and is as up-to-date in chassis specification as many 1935 private cars. In several respects, the Morris van is well in advance of contemporary design. Its four cylinder engine has a three-bearing crankshaft, and the chassis is insulated from engine vibration by means of the new "equipoise" mounting.

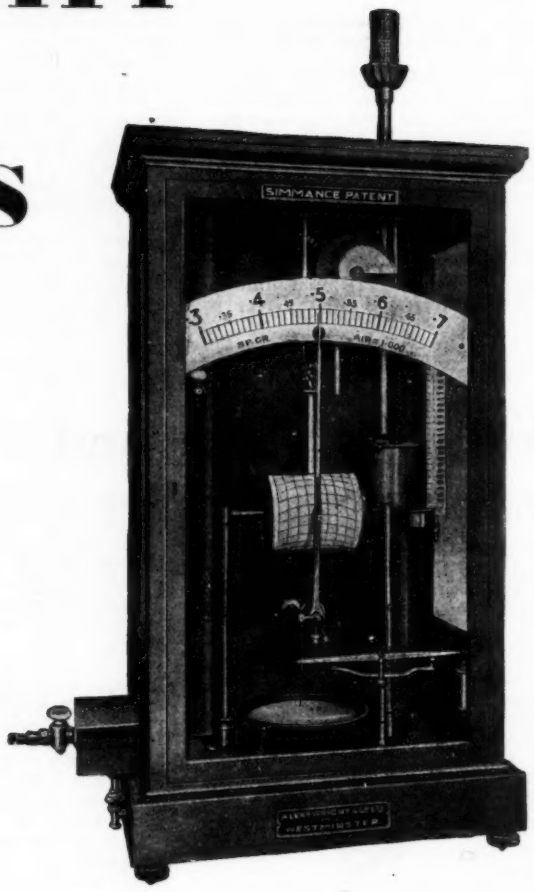


The New Morris Light Van.

The three-speed gearbox is of the synchromesh type and has a dipstick oil level indicator. Lockheed hydraulic brakes operate on four wheels, and the handbrake is provided with instantaneous adjustment. The electrical equipment comprises a six-volt set with five lamps, starter motor, windscreen wiper, and horn.

The facia board has large cubby holes and neatly grouped instruments. Finger tip controls are provided for the horn and for dimming the headlamps. The price of the 5-cwt. van, ready for the road, is £117 10s., that of the 8-10 cwt. model being £168. Unpainted, the prices are £115 and £165 respectively.

SPECIFIC GRAVITY of GASES



APPARATUS for testing and recording Specific Gravity of Gases has to perform a delicate operation. It must be responsive to the slightest change in specific gravity and yet must remain accurate under *all variations* from normal temperature and pressure.

The Simmance Patent Gravitometer is designed to meet these requirements; and, though constructed to utilise the very small operating force available (difference between weight of Air and Gas), the mechanism itself is not of a delicate nature. Instruments of this type have been in continuous use for upwards of 15 years without repair.

ALEXANDER WRIGHT & CO LTD

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Gas Markets and Manufactures

Stock Market Report.

[For Stock and Share List, see later page.]

Markets were particularly cheerful last week, and with the termination of the holiday season a large volume of business was transacted with a consequent hardening of prices. It is satisfactory to note the increasing confidence in British financial stability as evidenced by the large foreign buying of British Funds, all of which made substantial improvements on the week, the 3½% War Loan closing at a new record high level of 105½. Another good feature was the improvement in Australian Government stocks following the success of the United Australia party at the Federal election. Leading industrials were also in keen demand, and several large upward price movements were recorded, cable and motor shares making the best showing, the latter being influenced by the dividend and bonus declared by the Austin Company.

In spite of the intense activity prevalent in the more speculative markets, the volume of business in Gas stocks and shares last week was not adversely affected, and a number of stocks appreciated in value. The two preference issues of the Tottenham Company both advanced 5 points, the 5½% to 132½ and the 5% to 120½, while Croydon maximum dividend and 5% debenture both hardened 4. Portsmouth consolidated followed up last week's rise of 8 points with a further 1 to 177½, and it will be seen in the Stock and Share List that several other issues appreciated by 1 to 2 points.

The Preston Company's 5% preference stock appears to be somewhat undervalued at the present price of 103½, the yield on which is £4 16s. 7d.%, a high return on any gas preference stock. It is true the stock is closely held and seldom available (the last recorded transaction was in March last at 108), so that a standing order with a broker will be necessary to procure a holding.

The Severn Valley Gas Corporation, Ltd., has declared its first interim dividend, which is to be at the rate of 5% per annum, while the Bombay Gas Company is maintaining its interim dividend of 3½% (actual).

Current Sales of Gas Products.

The London Market for Tar Products.

LONDON, *Sept.* 24.

The values of tar products remain as follows:
Pitch, about 57s. 6d. per ton f.o.b.
Creosote, 4d. to 4¼d. per gallon.
Refined tar, 4d. to 4¼d. per gallon in bulk at makers' works.
Pure toluole, about 2s. 2d.; pure benzole, 1s. 9d. to 1s. 10d.; 95/160, solvent naphtha, about 1s. 7d.; and 90/160 pyridine, 7s. to 7s. 6d.—all per gallon naked at makers' works.

Tar Products in the Provinces.

Sept. 24.

The average prices of gas-works products during the week were: Gas-works tar, 25s. to 30s.; Pitch—East Coast, 52s. 6d. to 55s. f.o.b. West Coast—Manchester, Liverpool, Clyde, 52s. 6d. to 55s.* Toluole, naked, North, 1s. 7d. to 1s. 9d. Coal-tar crude naphtha, in bulk, North, 6½d. to 6¾d. Solvent naphtha, naked, North, 1s. 5d. to 1s. 6d. Heavy naphtha, North, 9¾d. to 10¾d. Creosote, *ex* works, in bulk, North, liquid and salty, 3¼d. to 3⅜d.; low gravity, 3¼d. to 3⅜d.; Scotland, 3⅛d. to 3⅜d. Heavy oils in bulk, North, 3⅜d. to 4¼d. Carbolic acid, 60's, 1s. 9d. to 1s. 10d. Naphthalene, £10 to £11. Salts, 55s. to 75s., bags included. Anthracene, "A" quality, 2½d. to 3d. per minimum 40%, purely nominal; "B" quality, unsalable.

* All prices for pitch are now quoted on the basis of f.o.b. In order to arrive at the f.a.s. value at any port it will be necessary to deduct the loading costs and the tolls whatever they may be.

Tar Products in Scotland.

GLASGOW, *Sept.* 22.

A moderate volume of new business has been placed during the week. Forward buying is taking place to some extent and prices generally are steady.

Crude gas-works tar.—Actual value is 33s. to 35s. per ton *ex* works in bulk.

Pitch.—There is not much interest being shown in this product, but quotations remain fairly steady at round 45s. per ton f.o.b. Glasgow for export, and 42s. 6d. per ton f.o.r. works in bulk for home trade.

Refined tar.—Quotations are being maintained at 3d. to 3¼d. per gallon in buyers' packages at makers' works.

Creosote oil.—Demand is about equal to supply and prices of all grades are steady. B.E.S.A. Specification oil is 4d. to 4¼d. per gallon; low gravity, 4½d. to 4⅝d. per gallon; and neutral oil, 4¼d. to 4½d. per gallon; all f.o.r. in bulk.

Cresylic acid.—Inquiries are more numerous and stocks are not being allowed to accumulate. Pale, 97/99% is 1s. 3d. to 1s. 4d. per gallon; dark, 97/99%, 1s. 0½d. to 1s. 1½d. per gallon; and pale, 99/100%, 1s. 4½d. to 1s. 5½d. per gallon; all *ex* works.

Crude naphtha is commanding 4½d. to 5d. per gallon, according to quality.

Solvent naphtha.—90/160 grade is 1s. 3d. to 1s. 4d. per gallon, and 90/190 grade 8d. per gallon.

Motor benzole remains nominal at 1s. 5d. per gallon.

Pyridines.—90/160 grade is 6s. 6d. to 7s. per gallon, and 90/140 grade 7s. to 8s. per gallon.

Benzole Prices.

These are considered to be the market prices for benzole at the present time:

	s.	d.		s.	d.	
Crude benzole	0	9	to	0	9½	per gallon at works
Motor "	1	3½	"	1	4	" " "
90% "	1	4	"	1	4½	" " "
Pure "	1	7½	"	1	8	" " "

Contracts Advertised To-Day.

Benzole Recovery Plant.
Ilkeston Gas Department. [p. 722.]
Lincoln Gas Department. [p. 722.]

Boosters.
Ilkeston Gas Department. [p. 722.]

Condensers, Exhausters, Washers, &c.
Ilkeston Gas Department. [p. 722.]

Electric Generating Sets.
Ilkeston Gas Department. [p. 722.]

Exhauster Sets.
Chelmsford Gas Department. [p. 724.]

Pipes and Trenching.
Lincoln Gas Department. [p. 722.]

Piping.
Ilkeston Gas Department. [p. 722.]

Retorts, Vertical.
Ilkeston Gas Department. [p. 722.]

Tar Extractor, Separator, and Tar and Liquor Draining.
Ilkeston Gas Department. [p. 722.]

Trade Notes.

James Keith and Blackman Company, Ltd.

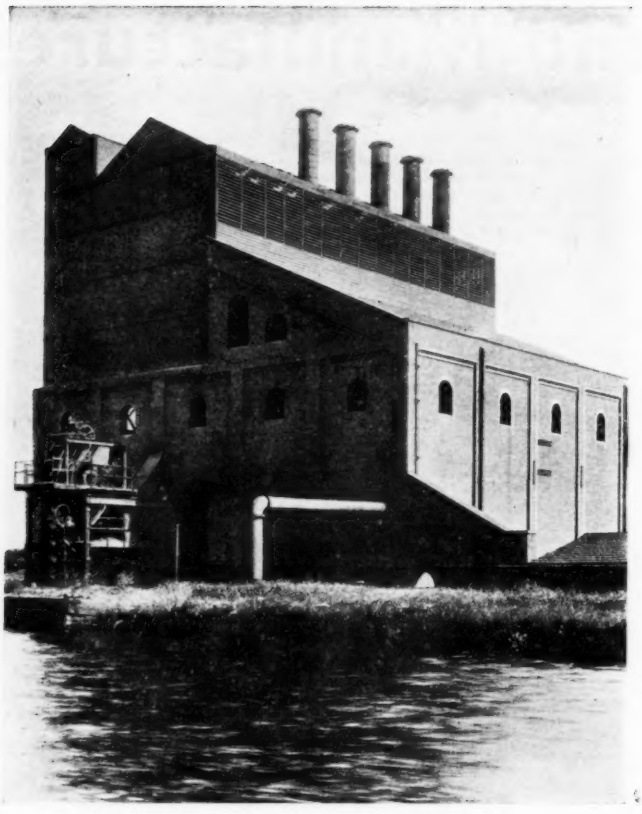
We have received from Messrs. James Keith & Blackman Company, Ltd., a copy of their illustrated booklet giving some details of their high-efficiency type blowing and exhausting fans. These fans are very suitable for all purposes requiring high pressures.

International Combustion, Ltd.

International Combustion, Ltd., of Aldwych House, W.C. 2, Power Station Engineers and Combustion experts, announce that they have purchased the share capital of the Riley Stoker Company, Ltd., of 9, Bridge Street, S.W. 1. The change of control involves no alteration in the policy of the Riley Stoker Company, which will continue, as heretofore, to market the various classes of stokers in which it is interested, as the purchase includes all patterns, patents, designs, and goodwill. The management of the Riley Stoker Company has been placed by International Combustion, Ltd., in the hands of Mr. H. J. Edmunds, who will operate with the existing staff from the offices of the Stoker Company.

Gas Progress in the Far East.

The annual report of the Singapore Gas Department for the year ended December 31, 1933, states that the make of gas amounted to 277,795,000 c.ft., as against 300,112,000 c.ft. during 1932, or a reduction of 7·4%. Of the above quantity 128,951,000 c.ft. was water gas, equal to 46·4% of the make. The gas used for public lighting amounted to 149,253,974 c.ft., or 53·7% of the output. The total number of lamps on the district is 3,828. The gas sold to private consumers shows a decrease of 14·4%. The unaccounted-for gas was equal to 4% of the make. Over 4,480 yards of new mains were laid during the year and 222 yards have been replaced. The gross profit made was $282,581·83. After deducting interest on loan, sinking fund, and renewal charges, there remained a net profit of $93,464·79, of which $22,903·30 was expended on additions of a capital nature, leaving a credit balance of $70,561·49.



FALKIRK

W & M CO LTD

ANOTHER 'REPEAT ORDER' FOR GLOVER-WEST VERTICALS

Falkirk adopted continuous carbonization on the Glover-West System in 1921, and the plant of forty vertical retorts illustrated above has supplied the gas requirements of the burgh continuously since that year. The new unit will have eight retorts of the steaming model, with an estimated daily gasmaking capacity of 720,000 cubic feet. There are now more than 350 installations of Glover-West vertical retorts in service or on order, with an estimated total daily output of 520 million cubic feet of gas.

GLOVER-WEST
VERTICAL RETORTS

•

WEST VERTICAL
INTERMITTENT
CARBONIZING CHAMBERS

•

THE WEST
LIP-BUCKET CONVEYOR
WITH AUTOMATIC LUBRICATION

•

CONVEYORS AND
ELEVATORS

•

COAL AND COKE
CUTTING AND GRADING
PLANT, ETC.

WEST'S CARBONIZING AND FUEL-HANDLING SYSTEMS

WEST'S GAS IMPROVEMENT CO., LTD.

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MILES PLATTING, MANCHESTER 10

TELEGRAMS :
STOKER, MANCHESTER

STOCK AND SHARE LIST.

Official Quotations on the London and Provincial Stock Exchanges.

Issue. £	Share.	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations. Sept. 21.	Rise or Fall on Week.	Transactions. Lowest and Highest Prices During the Week.
1,551,868	Stk.	Sept. 10	7	7	Alliance & Dublin Ord. ...	139—142*	...	...
374,000	,,	June 25	4	4	Do. 4 p.c. Deb. ...	90—100	...	...
557,655	,,	Aug. 13	7	7	Barnet Ord. 7 p.c.	165—170	...	...
300,000	1	May 7	1/4⅓	1/9⅔	Bombay, Ltd.	27/6—29/6	...	...
178,480	Stk.	Aug. 13	9½	9½	Bournemouth sliding scale	212—217	...	...
550,050	,,	,,	7	7	Do. 7 p.c. max. ...	167—172	+1	...
439,160	,,	,,	6	6	Do. 6 p.c. Pref. ...	140—145	...	...
50,000	,,	June 11	3	3	Do. 3 p.c. Deb. ...	78—83	...	...
262,025	,,	,,	4	4	Do. 4 p.c. Deb. ...	103—108	...	...
335,000	,,	,,	5	5	Do. 5 p.c. Deb. ...	122—127	...	...
357,900	,,	Aug. 13	7½	7½	Brighton, &c., 6 p.c. Con. ...	161—166	...	164
540,000	,,	,,	6⅔	6⅔	Do. 5 p.c. Con. ...	152—157	...	155—156
195,500	,,	,,	6	6	Do. 6 p.c. B. Pref.	142—147	...	...
1,487,500	,,	July 9	5	5	Bristol 5 p.c. max.	118—119[a]	+½	...
120,420	,,	June 11	4	4	Do. 1st 4 p.c. Deb. ...	102—105[a]	...	...
217,870	,,	,,	4	4	Do. 2nd 4 p.c. Deb. ...	102—105[a]	...	...
328,790	,,	,,	5	5	Do. 5 p.c. Deb.	121—123[a]	...	...
865,000	,,	Apl. 9	7	8	British Ord.	160—165	+2	162—163
100,000	,,	June 11	7	7	Do. 7 p.c. Pref.	154—159	...	...
350,000	,,	,,	5½	5½	Do. 5½ p.c. Pref.	104—109	...	...
120,000	,,	,,	4	4	Do. 4 p.c. Red. Deb. ...	98—103	...	...
450,000	,,	,,	5	5	Do. 5 p.c. Red. Deb. ...	107—112	...	...
160,000	,,	June 11	5	5	Cambridge 5 p.c. Deb. ...	115—120	...	...
100,000	10	22 May '33	6	4	Cape Town, Ltd.	2—4	...	...
100,000	10	Nov. 6	4½	4½	Do. 4½ p.c. Pref. ...	4—6	...	...
150,000	Stk.	July 23	4½	4½	Do. 4½ p.c. Deb. ...	90—95	...	...
626,860	,,	July 23	6	6	Cardiff Con. Ord.	129—133	...	133¼
237,860	,,	June 11	5	5	Do. 5 p.c. Red. Deb.	108—108	...	...
157,150	,,	July 23	5½	5	Chester 5 p.c. Ord.	113—118[b]	...	...
98,936	1	May 7	2/-	9/-	Colombo, Ltd. Ord.	1⅞—1½	...	35/8
24,500	1	,,	1/4½	1/4½	Do. 7 p.c. Pref. ...	19/6 - 21/6	...	...
609,204	1	Mar. 19	/11'48	/11'48	Colonial Gas Assn. Ltd. Ord.	19/6—21/6	...	...
296,058	1	,,	1/8'30	1/8'30	Do. 8 p.c. Pref.	23/6—25/6	...	...
1,775,005	Stk.	July 23	6½	5	Commercial Ord.	120 - 125	...	190
475,000	,,	June 11	3	3	Do. 3 p.c. Deb. ...	83 - 88	...	86½
286,344	,,	Aug. 13	5	5	Do. 5 p.c. Deb. ...	120 - 125	...	...
807,560	,,	Aug. 13	7	7	Croydon sliding scale ...	153 - 158	+1	...
569,590	,,	,,	5	5	Do. max. div.	107 - 112	+4	108 110
620,385	,,	June 25	5	5	Do. 5 p.c. Deb.... ...	123 - 128	+4	125 127½
542,270	,,	Aug. 13	10	7	Derby Con.	177 - 182[e]	...	...
55,000	,,	June 25	4	4	Do. 4 p.c. Deb.	97 - 100[e]	...	...
209,000	,,	Aug. 13	5	5	East Hull Ord. 5 p.c. ...	108 - 112	...	...
181,625	,,	Aug. 13	6	6	East Surrey Ord. 5 p.c. ...	126 - 131	...	...
175,509	,,	June 11	5	5	Do. 5 p.c. Deb. ...	120 - 125	...	122
1,002,180	,,	Sept. 10	17	15	European, Ltd.	122 - 127*	...	122½—125
19,342,765	,,	Aug. 13	5⅝	5⅝	Gas Light & Coke 4 p.c. Ord.	26/6 - 27/-[f]	...	26/4½—26/9
2,600,000	,,	,,	3½	3½	Do. 3½ p.c. max. ...	87—90	...	89½—90
4,477,106	,,	,,	4	4	Do. 4 p.c. Con. Pref. ...	105—108	...	106⅝ 107⅞
6,102,497	,,	May 28	3	3	Do. 3 p.c. Con. Deb. ...	87 - 90	+1	89½—89½
3,642,770	,,	,,	5	5	Do. 5 p.c. Red. Deb. ...	116 - 119	...	...
3,500,000	,,	,,	4½	4½	Do. 4½ p.c. Red. Deb. ...	114—117	...	115½—116
270,466	,,	Aug. 13	6	6	Harrogate New Cons. ...	127—132	...	...
140,000	1	Apl. 23	1/7½	1/7½	Hongkong & China, Ltd. ...	1⅜—1⅝	...	...
218,200	Stk.	Aug. 13	6	6	Hornsey Con. 3½ p.c. ...	127—132	...	...
5,500,000	,,	May 28	10	14	Imperial Continental Cap.	205 - 210	...	206—208
228,130	,,	July 23	3½	3½	Do. 3½ p.c. Red Deb.	92 - 97	...	...
235,242	,,	Aug. 13	8½	8½	Lea Bridge 5 p.c. Ord. ...	164—172	...	...
2,167,410	,,	Aug. 13	6	6	Liverpool 5 p.c. Ord. ...	134 - 138[b]	+1	...
245,500	,,	June 11	5	5	Do 5 p.c. Red. Pref. ...	101—111[b]	...	...
306,083	,,	July 16	4	4	Do. 4 p.c. Deb. ...	101—103[b]	+½	...
165,736	,,	Aug. 27	10	8	Maidstone 5 p.c. Cap. ..	180 - 190	...	...
56,176	,,	June 25	3	3	Do. 3 p.c. Deb. ...	71—76	...	...
75,000	,,	May 28	†10	†10	Malta & Mediterranean ...	200—210	...	...
892,000	—	Apl. 3	5½	5½	Metropolitan (of Melbourne) 5½ p.c. Red. Deb.	102 - 105	+1	103
231,978	Stk.	Aug. 13	5	5	M. S. Utility "C." Cons. ...	111—116	...	...
818,657	,,	,,	4	4	Do. 4 p.c. Cons. Pref.	97 - 102	...	...
360,078	,,	June 11	4	4	Do. 4 p.c. Deb. ...	100 - 105	...	...
148,955	,,	,,	5	15	Do. 5 p.c. Deb. ...	119 - 124	...	...
125,000	—	July 2	...	11/8	Do 3½ p.c. Rd. Rg. Bds.	97—100	...	...
675,000	,,	May 28	†6	†13	Montevideo, Ltd.	60 - 65	...	61½
9,061,315	,,	Aug. 13	6⅔	5	Newcastle & Gateshead Con.	25/3 - 26/-[d]	...	...
682,856	,,	,,	4	4	Do. 4 p.c. Pref. ...	102½ - 103½[d]	...	...
776,706	,,	June 11	3½	3½	Do. 3½ p.c. Deb. ...	93½ - 93¾[d]	...	...
277,385	,,	May 7	5	5	Do. 5 p.c. Deb. '48 ...	105—107[d]	...	...
274,000	,,	Aug. 13	5	5	Newport (Mon.) 5 p.c. max.	105—107[a]	...	...
304,940	,,	Aug. 13	7½	7½	North Middlesex 6 p.c. Con.	153 - 158	...	...
393,150	,,	Aug. 13	5	5	Northampton 5 p.c. max. ...	102 - 107	...	...
300,000	,,	May 7	†9	†7	Oriental, Ltd.	167—172	...	170
416,617	,,	June 11	8	8	Plym'th & Stonehouse 5 p.c.	178 - 183	...	...
504,416	,,	Aug. 13	8	8	Portsm'th Con. Stk. 4 p.c. Std[e]	175 - 180	+1	177—179
241,446	,,	,,	5	5	Do. 5 p.c. max. ...	105 - 110	...	106½
114,000	,,	July 23	5	5	Preston 5 p.c. Pref.	101—106	...	...
1,736,968	Stk.	Aug. 27	6	4	Sheffield Cons.	139—141[e]	...	...
95,000	,,	July 9	4	4	Do. 4 p.c. Deb. ...	100 - 104[e]	...	...
133,201	,,	Aug. 13	5	5	Shrewsbury 5 p.c. Ord. ...	137—142	...	...
90,000	10	May 28	†4	†3	South African	2—4	...	...
889,095	1	Sep. 10	1/3⅞	1/2⅞	South East'n Gas Cn. Ld Ord	28/—29/-[c]	...	28/6
736,061	1	,,	-/10½	-/10½	Do. 4½ p.c. Red. Cum. Pref	21/9—22/9*	...	22/3 - 22/9
450,000	Stk.	Aug. 13	7¼/4	4	Do. 4 p.c. Red. Deb. ...	101 - 103	...	...
6,709,895	,,	Aug. 13	7	5	South Met. Ord.	136—139	...	137½—138½
1,135,812	,,	,,	6	6	Do. 6 p.c. Irred. Pf.	142—147	...	...
850,000	,,	,,	4	4	Do. 4 p.c. Irred. Pf.	104—107	+1½	...
1,895,445	,,	June 25	3	3	Do. 3 p.c. Deb. ...	87—90	+2	87⅞—90
1 000,000	,,	July 9	5	5	Do. 5 p.c. Red. Deb.	115—118	...	116½—117½
209,820	,,	Aug. 13	5½	5½	South Shields Con.	167—169[d]	...	...
1,543,795	,,	July 9	6	6	South Suburban Ord. 5 p.c.	133—136	...	134 - 135½
512,825	,,	,,	5	5	Do. 5 p.c. Pref.	120—125	...	...
300,000	,,	,,	4	4	Do. 4 p.c. Pref.	101 - 106	...	...
868,837	,,	June 11	5	5	Do. 5 p.c. Deb.	121—126	...	...
100,000	,,	,,	4	4	Do. 4 p.c. Deb.	102—107	...	...
647,740	,,	Aug 13	5	5	Southampt'n Ord. 5 p.c. max.	112—117	...	...
121,278	,,	June 11	4	4	Do. 4 p.c. Deb.	99—104	...	...
350,000	,,	Aug. 13	5½	5½	Swansea 5½ p.c. Red. Pref.	107 112	...	111½
200,000	,,	June 11	6½	6½	Do. 6½ p.c. Red. Deb.	102 - 107	...	...
1,076,490	,,	Aug. 13	6⅔	6⅔	Tottenham and District Ord.	153—158	...	...
409,835	,,	,,	5½	5½	Do. 5½ p.c. Pref. ...	130—135	+5	131½—133½
62,235	,,	,,	5	5	Do. 5 p.c. Pref. ...	118 - 123	+5	...
199,005	,,	June 11	4	4	Do. 4 p.c. Deb. ...	100 - 105	...	...
349,110	,,	Aug 13	7	7	Uxbridge, &c., 5 p.c. ...	153 - 158	...	156½
88,330	,,	,,	5	5	Do. 5 p.c. Pref. ...	112 - 117	...	...
1,326,700	,,	Aug. 13	7	7	Wandsworth Consolidated	158—163	+1	160—161½
1,371,373	,,	,,	5	5	Do. 5 p.c. Pref.	119—124	...	123 124
1,317,964	,,	June 11	5	5	Do. 5 p.c. Deb.	121—126	...	124½—124½
208,303	,,	,,	...	26/8	Do. 4 p.c. Deb.	104 - 107	...	...
158,400	,,	Aug 13	6g	5	Winchester W. & G. 5 p.c. Con.	115—120	...	...

Quotations at:—*a.*—Bristol. *b.*—Liverpool. *c.*—Nottingham. *d.*—Newcastle. *e.*—Sheffield. *f.*—The quotation is per £1 of stock *g.*—Paid £8, including 10s. on account of back dividends. * Ex. div. † Paid free of income-tax. ‡ For year.

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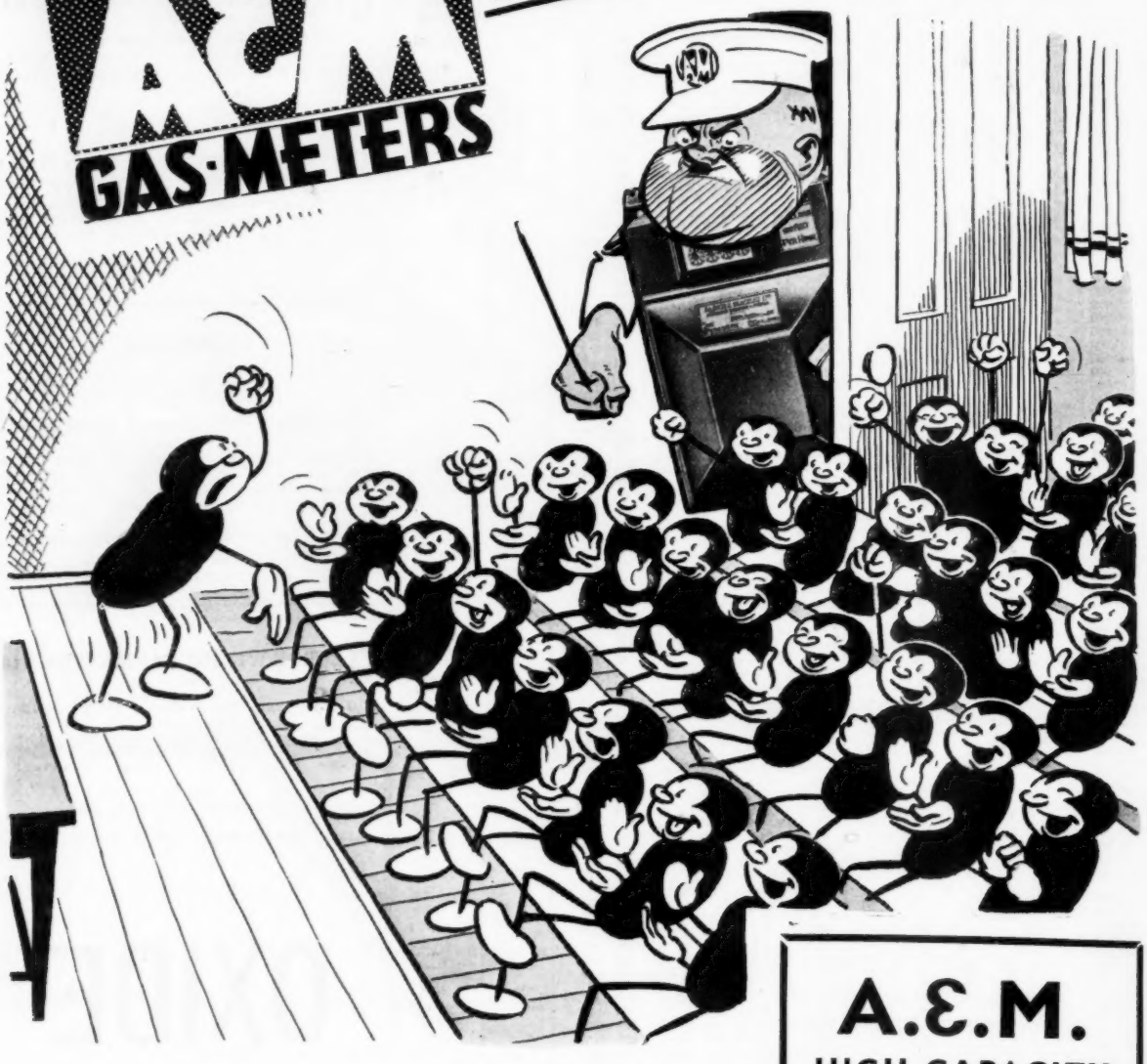

Theo the therm had the meeting with him when he was expatiating on his favourite topic, "more freedom for therms," but he wilted under the Sergeant's eagle eye. "It's all just GAS," he muttered, "we know YOU control the therms."

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